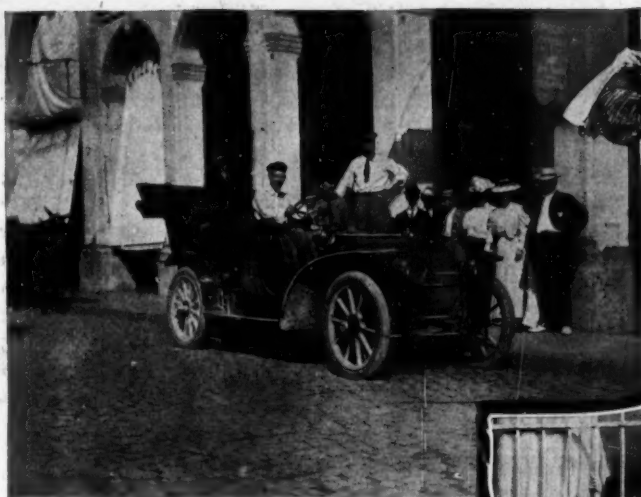


MOTOR AGE

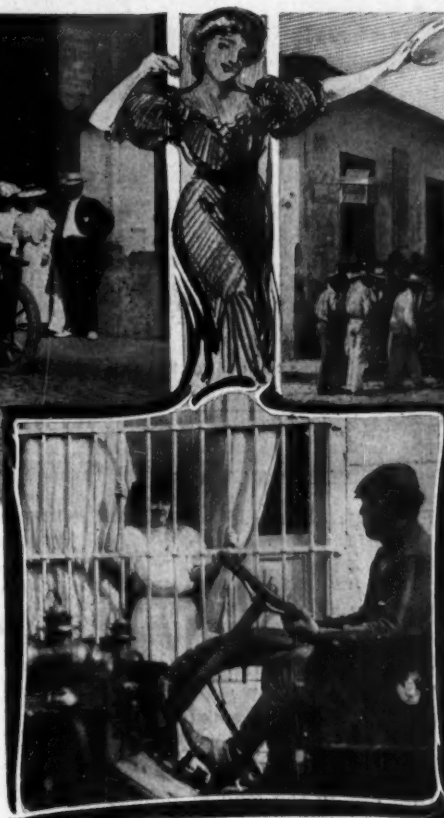
CUBAN ROADS CONQUERED BY MOTOR CAR



PACKARD CROWD LEAVING HAVANA

SILHOUETTED against a dark, clear sky like stately sentries, a hundred palm trees framed such a picture as Cuba island never has seen. Close by a trickling stream at the bottom of a stone valley, a huge flaring fire of palm leaves cast theatrical lights on a quintet that was viewed with much wonder by two Cubans on horseback and a barefooted native who stood in awed silence before the group. In the deep gloom under a cluster of palms stood the big black thing in which they had come—a motor car. It was wonderful. Even this country of wars, oppression and insurrections had heard of no such thing. Motor cars they knew the great Americanos had to skip over country where there were roads. Here there was no road. This route through the hills was but a path for horses and that rock-strewn ascent—surely the big motor car could not go up such a hill. The Americans laughed and asked about the country and its trails. The dark-visaged doctor and his servant answered in that rapid fire of Spanish which makes a Cuban conversation like the popping of a Hotchkiss. But even the exuberant Spanish tongue, nor the skillful interpreter was able to express the full measure of Cuba's surprise at such a vehicle in such a country.

It was the adventurers' first night un-



"QUE HAY, SENORITA"

der the star-brilliant skies of Cuba. That afternoon they had gayly skipped out of Havana, leaving behind a wholesale stock of pessimistic warnings. At garage, hotel, store, restaurant—every Cuban and every American had said: "Impossible; it can't be done. Why, there are no roads at all in the interior. You will not get 25 miles away from Havana. You had better stick to the delightful speeding on the San Cristobal road, like the orthodox tourists who come here."

Perhaps the wide and glorious fame of the San Cristobal road had brought these Americans southward via the False Impression air line. But now that they were there, they would go into the back yard of Cuba whether or no, roads or no roads. Thus when the first day's sun sank behind a palm-fringed screen and, without even a twilight overture, the whole big night



IN THE SPOT LIGHT AT JARUCA

filled the stage, four Americans and a leased Spanish Voice gnawed hungrily at the Cuban-cooked guinea hen which had been bought of the barefooted farmer, while they talked with the strange doctor who rode abroad at night in a wide wild country.

"Is this the road for Matanzas?" queried an American.

"Este es el camino para Matanzas?" echoed the interpreter. And the answer started with "Si, senor," but ended with something which sounded like a nickel-in-the-slot piano and meant that it was about 45 leagues to Matanzas; that the motorists should have gone another way; that the road was nothing but a series of stone-stepped hills and ragged ravines; that the next town, about a league and a half away, was called Jaruco; why had they ventured such a hazardous and altogether impossible journey? Who were they and from where did they come?"

To the best of the motorists' knowledge the conversational transfer told the attentive audience that they hailed from Detroit; that the longest one, with the khaki suit, was S. D. Waldon, sales manager of the Packard Motor Car Co.; the others being Senors George Crebbinn and Estep; that the motor car was a Packard, and that they intended to stay a week or more



THROUGH LAND RESEMBLING A CRATER'S BOTTOM

TRAIL FOLLOWED IS SIMPLY A RAVINE

touring in the interior of Cuba. At least he talked long enough to have told all of this and then a little.

That first day the motorists had made 30 miles between 2 o'clock, when they pulled away from the Pasaje hotel, and when darkness caught them at the spot they named Camp Jaruco because it had never been properly christened. It had been a hard afternoon's drive and in a degree the evil forebodings of the Havana skeptics had been realized.

The Americans left Havana down an aisle of palms, floored with velvet macadam and sentinelled with an occasional block house which added romance to the picture of low huts dotting the rolling hills. The macadam terminated soon in a stretch of freshly graded but uneven road, where a new state highway is being built. This gradually went from bad to worse until it reached the ordinary and typical Cuban trail which never has felt a roadmaker's hand. Six leagues out of Havana the motorists seemed to be in the midst of an elemental country, and it was easy to imagine all manner of hardship as companion woes to the steep hills and rough ditch-like trails that formed the only route we could find. They discovered that the rough fields were often better than the trail. So they climbed a couple of hills over plowed ground and then all but jumped down a near precipice to Camp Jaruco.

The Americans commenced the second day on a frugal breakfast of tea and crackers and a hill-climb through a field to a peak where a farmer had a hut which overlooked so much of Cuba that the tourists shut their eyes

to the prospect. It was on this day that they began learning Cuba in earnest. They met strange things at close range. After having toiled laboriously and precariously over some rocky ridge or crept along a ravine where the one wheel would have to bump from rock to rock and the other follow a sloping ledge, they would strike a brand new fantastic setting, laugh at its quaint and innocent actors, blush at its dishabille, kill a scorpion or two, go splash, dash through a minor ford, or stop a moment at some hut with the inevitable:

"Oiga, ohico; Este es el camino?"

They lunched at Jaruco with the whole town as audience, which retired with a yell to box seats in their respective windows when the tourists started the motor and rushed on. For an eighth of a mile they beat it, and remembered the Glidden tour. Then they pitched off into the middle of Cuba and for the afternoon were again lost in the land of beautiful flowers and majestic trees; red clay soil which has been cut deep with the long worn ruts of giant ox-carts; ruins that seem yet to

smolder with the fire that Weyler lighted; stones which carpet the earth so thickly that the only way around them is over them. Once the road dropped into a trough in the red earth. Just wide enough to let them through, it was like riding down some winding flue, not knowing whither, because the grass on the banks reached high above them. Often they found the only passage to be along the wriggling stone fences and with hatchet and machette cut down the underbrush to clear a trail.

That second day the Americans began to get into the region of rivers and went through a rehearsal of the great continuous show of succeeding days, the act of wading into a river to find out where might be a safe path for fording it. They were glad to end the day, with 34 miles gained, at a farmhouse hut with a few feet of grocery store in one corner. They ate the typical country meal; garlic-flavored, greasy and made up of eggs, chicken and rice, tomatoes, fried potatoes and bread. They added tea. Coffee in Cuba is solo, which means so black that one must be in good training to drink it; or con leche, which means about half-and-half with warm Cuban milk, which is not the kind of milk a foreigner is used to. The Detroiters slept on cots in a well-ventilated corner of the house—at least they stayed on the cots, while they listened to queer night noises, fought fleas and discussed this peculiar land of manana, where nothing is done today and where a lot of things that ought to be done probably never will be done.

At daylight they swallowed some coffee and



GETTING ROAD DIRECTIONS FROM THE CUBANS



TYPICAL OX CART LOADED WITH SUGAR



A STUDY IN CLEARANCE, 11 AND 41 INCHES

struck off on the 9-mile stretch to Matanzas. They met a section of state road in process of construction and mounted its rough stone but level surface only to reach, in a few hundred yards, a wide chasm where the bridge had not yet been built and the river flowed between banks a hundred feet deep. This is a bad habit of Cuban rivers. They can be forded by carefully selecting a course over ridges in the solid rock which forms their bed. It is a harder task to reach them. The only way down the precipitous bank is through some ravine or washout. This invariably is a crooked path of rock with steep drops and actual steps 3 and 4 feet high. Sometimes a crooked, lengthwise rut, worn by the years of horse travel and by the ox-carts which have been hauled up the path, made it necessary to run the car down with the wheels on the almost vertical walls of the rut. Often they were forced to take the mattock and cut a slender shelf for several yards along such a wall, in order to give the car even the slightest footing. Once at the bottom, there is the strip-and-wade-into-the-river act to determine the proper place to cross; the ford itself, with a rubber coat over the radiator to keep water out of the bonnet, and then to climb up a ravine that matches the one by which the descent was made.

The travelers stopped a few hours in Matanzas to buy some groceries, search for gasoline and add to their supply of road-making implements. They also changed interpreters and this time got one Geerken, clerk of the Hotel Paris, whom they called Roe and who turned out to be not

only capable and willing, but comedian enough to help turn many a deep mud hole or turbulent river into a joke.

Eastward the star of hope took its way in a Packard car, over a new good road which stopped after 9 miles so suddenly in a natural stone quarry that the motorists once more adopted across-lot tactics. A river which had been described as 15 feet deep turned out to be almost dry, and they hardly missed the bridge, which had once been there, but which the Spanish army had destroyed while industriously engaged in keeping a big bunch of machete slingers from following. Towns were thick along here and the Americans much enjoyed coming out of a hard fight against ruts and stones into a level area where from the collection of houses there invariably streamed a horde of young and grown-up children, whose eyes popped out, whose tongues could hardly answer the "Que hay!" and whose feet finally pattered rapidly on the stones as they chased up the road to prolong the final view of this new American invasion. The tourists had a lot of trouble convincing the na-

tives that they did not belong to the United States army. What else but that great, all-powerful United States army could have such a vehicle wherewith to travel over such trails as those of Cuba? The day netted 44 miles, which was pretty good considering the 4-hour wait in Matanzas. The Packardites ate under the flickering flame of an acetylene lamp in the main room of a farmhouse called Tosca. In rural Cuba the poor use candles or simple kerosene lamps, but the more pretentious have acetylene, manufactured in a small generator kept outside the house. Now the travelers were getting into the heart of the sugar cane region, and the fourth day earned 60 miles, some of the going being pretty good. Ruts were encountered by the mile, for there was much hauling of sugar cane thereabouts. Also more stones and rivers and those long stretches where there is no road, and the motorists simply picked a way to their taste across the stone-strewn, grass-covered hills and flat lands. Everywhere there were ruins to remind of the war, and in the towns "Vive la libre Cuba" signs cal-

cimined on the sides of the houses. The fighting evidently had been the real thing in this neighborhood. In fact, the rural guard who sold the tourists a machete said he had killed seven Spaniards with it.

The invaders stopped at an immense sugar mill to get a glimpse of its inner workings and a drink of water which was brought in a porron. This is a bottle which you must not touch with your lips, but must hold several inches away and try to hit your mouth with a stream of water. Macagua was an interesting night rest. The



TYPICAL RIVER IN SANTA CLARA PROVINCE



COUNTRY GENERAL STORE OF THE BETTER CLASS

whole countryside had come to town, for it was Sunday and there had been a ball game between local teams; also there was a dance in the hotel office that evening and the invaders attended this in full dress—flannel shirts, khaki knee trousers, leggings, mud and 4 days' growth of beard. It was not much fun, so they went outside and showed a lot of fussing, jabbering town celebrities how to send up a big red-white-and-blue paper balloon.

For 5 more days the Michiganders went on into the hillier and wilder country. Monday was then record day—63 miles. Most of these were made through an immense flat country, which was either swamp, out of which grew grass higher than the car and which hid wet and hard ground and stones alike, or it was a high plateau, where there was not a thing in

sight but royal palms, scattered clumps of shrubbery and ponds. Here the surface was fairly hard, although to a northern road-trained eye it would have looked rough and arduous of travel. They got over it fairly well until they lost their way and only found populated country by cutting to a railway track, which they knew to be to the south of them, and then by following along its right of way to the next town. Some time when you are riding on a train, look for a place where the right of way goes up and down over clay banks and is thick-covered with rank grass, concealing all kinds of stones, bumps and hollows. Then imagine a motor trip over it and you will have a fair idea of the best road they struck for many a toilsome league. A league, by the way, is the universal standard of measure in Cuba and it means nothing in the mind of the man who tries to tell you how far it is to somewhere. The average country Cuban never has been farther than a few miles from his own home.

The adventurers managed to get away off the route, missed the towns they expected and found others they did not want. Toward the close of the afternoon they learned that they were cutting across fields and over unused trails and along forgotten highways to Esperanza, so they knew they would then be on the way to Santa Clara. The rivers were close together. They forded nine that day, including some where the climbs up the far bank were so steep that if named in grade per cent would not be believed.

Nightfall caught the travelers in the one-too-many bog—a wide one into which they had slipped off the edge of a ridge. The car sank to its axles. Luckily they were in a region of stone fences. Jacking up one wheel at a time with stone fulcrums and saplings for levers, they built a rock foundation under each. Some Cuban

farmers came along and helped them. Under the leadership of a lean, wiry individual they hustled with amazing energy. Through the clear night rang the quick "Espere un poco!" and the commanding "A un tiempo!" directing the movements of the men on the ends of the levers. When the car had a foothold the motor was started, and, with a great upheaval of rock and mud, jumped to the hard ground, and the interested natives let out a loud yell of approval and the wiry one shouted: "El Toro! El Toro!" Thus the car got its nickname.

Some more smaller mud holes, then a hill hewn roughly out of the native rock and climbed slowly in the dark, and the tourists drove into Santa Clara, proudly directed to the hotel by one of the Cubans who had come along as guide. He soon was the center of an eager crowd and probably told fearful and wonderful tales of this motor car in which he, among all Cubans of the province, had been the one to ride.

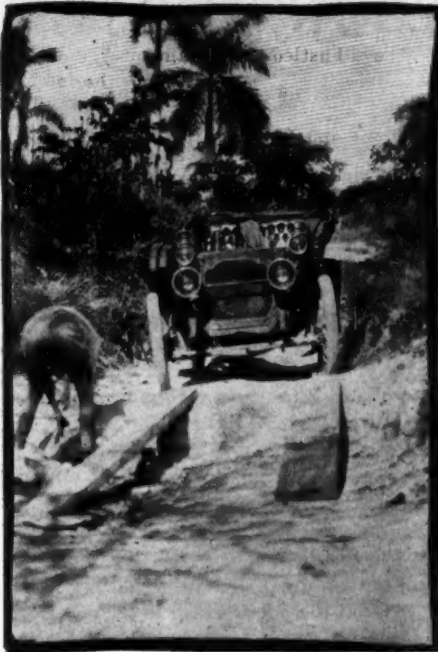
The rest of the tour was in the rain. Roads which had been fairly good when dry turned to slippery rinks of red mud. Ruts which could be ridden on the ridges during dry weather could be taken only by the most careful driving and arduous road picking. Ravines were so slippery it seemed worse than foolhardy to try to either ascend or descend. Rivers rose. Bogs and swamps were turned into streams of soft mud. At each one the Americans had to stop and find out if the bottom were hard or soft. They had profited by experience. A hard bottom one they took by shooting it, a process which explains itself. The deep, wide, treacherous swamps they bridged with rough corduroy roads of palm trunks and underbrush. It was hard work. They forded three mountain rivers, for now they were in the Sante Fe moun-



DRINKING FROM A CUBAN WATER BOTTLE



GOOD SAMPLE OF A CUBAN FORD



CIRCUS FEATS BY A PACKARD

tains and were glad when, at the top of the struggling ascent up the rain-washed pass, they found a shelter and something to eat in a little grocery annex to the home of a farmer. Waldon bunked on a bench, with the seat cushions for mattress and fleas for company. The rest were on cots or in hammocks. The night was cold. They were stiff in the morning when they looked out on another day of rain and a perspective of mountain ridges, gullies, rivers and lowland sloughs. Until noon they worked getting over the 3 miles to Camajuani.

The rest of the day was a continuance of the same thing, and they made 1 less mile than the day before—13 instead of 14. At night they were still dodging or fighting through mud holes, and quit the day's work at a sugar plantation. They had supper in the laborers' eating house and slept on the same table. They dried their clothes over the kitchen fire, and laughed at each other and recited their experiences of the day.

They hit Placetas early the next morning and found they had made a needless trip through the Santa Fe mountains. They should have cut straight across from Santa Clara and left Camajuani and the Camajuani river peacefully unaware of their existence. So they promptly left Placetas by the wrong road and about noon discovered they had made a goodly number of hard-earned, rain-soaked miles back toward Santa Clara. Twenty-seven miles altogether brought them to a tobacco plantation and they were taken in.

That was a wonderful supper—the best they had had. Potage of beans, other vegetables and meat; fish, guinea, rice, fried potatoes—they were hungry and they ate voraciously under the eyes of senior, senora, senorita and the children who were under the clothes age limit.

Then they discussed themselves and marveled at the racking they had given El Toro, marveled at the way the tire casings had stood the abuse on the rocks, marveled at the feats of rough and ready road engineering and motor car driving which had been performed. Meanwhile senora slung hammocks for them and when they went to them, lo, they were in a thatch-roofed pig pen! So they counted the eight pigs in the glare of a side lamp and chanted the glad refrain of that cablegram from the general manager: "Have a good time!"

The last day—if they could make the 28 miles to Sancti Spiritus in one stretch of daylight! Ahead they always could see the mighty Tuerto, flanked by Cabellete de Casa and La Gloria. The whole country was soaked to the marrow. The farmers told them this rain was a delayed wet season. It seemed to them to be the real article. With the tonneau a mud-soaked mess of road tools, canned food, grips and blankets; with all but the driver on the running boards when they were not all out in the road shoveling, carrying stones or prospecting, they worked by right road and wrong road toward the town Guayos, where they debated whether they should stay for the night or take a chance of finishing it up rain or shine, muddy or dry, hills and rivers be d—d. A Cuban rural guard said that just over the next hill started a good road stretching to Sancti Spiritus. That next hill was like tomorrow, which never comes. Up one steep ascent of yellow clay, running with water and so slippery that even the few sure-footed Cuban ponies which they met slid, sprawled and fell; down again and up, always looking for that promised road "over the next hill." They found it just outside of Sancti Spiritus, and the whole population of that city is still telling of how they flocked into the narrow streets to see the arrival of the motor car.



RUNNING DOWN STONE STAIRWAY

There is more to tell—the little things which were big at the time; the funny things and the hardships; the people, their homes, their country and their ways; the experiences in the towns and the disappointments in the country. There was so much to tell that each new hour's experience drove almost from mind that of the previous hour. One thing they always had in mind—they had done what they had been told could not be done; they had traveled where no other four-wheeled vehicle had ever traveled; they had conquered in their Packard Thirty the alleged impassable obstructions of the wild interior of Cuba—they had made good and did not care a rap that they had no clean clothes in which to appear before the elite of Sancti Spiritus.



ENTERING FARMYARD THAT MEANT SUPPER AND LODGING

NEW YORK-PARIS TEST AROUSES INTEREST

NEW YORK, Feb. 4—Those who have been questioning the sincerity of the promoters of the New York-Paris endurance test which is scheduled to start from this city a week from next Saturday have had their skepticism shaken somewhat by the cabled announcement that five of the foreign cars are on the ocean now and are expected to reach New York the latter part of the week. It is felt here that these cars are certain starters even if none of the Americans come to the tape. If such were not the case it is hardly likely the foreign makers would have gone to the expense of holding tryouts on the other side of the ocean and then shipping the cars to this country. The German entry, the Protos, ought to be here Friday, it being on the Kaiserin Auguste Victoria, while the de Dion, Sizaire-Naudin and Motobloc, the French entries, and the Brixia Zuc, the Italian nominee, are on La Lorraine.

While no one seems to know just how these cars have been rigged up for the 20,000-mile journey, it is said that on the Motobloc are cushion tires instead of

pneumatics. Considerable interest is being displayed in the German car, for there are few in New York who have heard of the Protos. When the entry first was announced it was supposed it was the Por-thos, which is a French car. Many therefore wondered how it could be classed as a German entry. This car goes into the run with the especial sanction of Emperor William himself, who has granted a year's leave of absence to Lieutenant Koopher, of the Fifteenth Prussian infantry, who is in command of the expedition and with orders to report on the feasibility of the motor car to the German military officials. The driver of the car will be Hans Knappe, who once was an engineer in the German army, while a third man in the party will be Ernest Maass, a German motor cycle expert of considerable prominence.

While not much has been heard from the American candidates it is said there are three cars being prepared for the fray—a Thomas, a Hol-Tan and a Maxwell. There is some talk of a White steamer taking part, but this has not been verified as yet. The American cars all have been given a

thorough overhauling, their frames strengthened and immense gasoline and oil tanks fitted. The Thomas is the same roadster which won the Brighton Beach 24 and which Montague Roberts is expected to drive.

The American Automobile Association, true to its promise of a couple of weeks back, is doing its best to be of assistance to the contestants. It has written its members along the line of march asking that every courtesy be shown the travelers and soliciting the best information obtainable regarding the roads west of Chicago. Responses are coming in now and it is more than probable the strangers will be helped over the hard spots as far as San Francisco, anyway. The Chicago Automobile Club has undertaken to look after the middle west and it has informed the A. A. A. it is on the job. The Automobile Club of America has joined in the movement and has offered the foreign contestants the use of its clubhouse and its garage during their stay in the city. This offer has been taken up and so the million-dollar clubhouse probably will be official headquarters.

ROUTES TO BE FOLLOWED BY THE CONTESTANTS IN THE MOTOR CAR ENDURANCE

To—	Miles	To—	Miles
New York	0	Fishkill	62
Yonkers	17	Wappinger's Falls	68
Hastings-on-the-Hudson	21½	Poughkeepsie	74
Dobbs Ferry	23	Hyde Park	80
Irrington	24½	Staatsburg	84
Tarrytown	27½	Rhinebeck	90
Ossining	33	Red Hook	96
Croton Landing	35½	Upper Red Hook	99
Mont Rose	40½	Clermont	104
Peekskill	44	Hudson	116
Anaville	45½	Stockport	121
Garrison-on-the-Hudson	51	Stuyvesant Falls	125
Coldspring	55	Kinderhook	129
		Schodack Centre	140
		Albany	148

From Albany the start westward is made, leading—

To—	Miles	To—	Miles
Latham Corners	155	West Cayuga	334
Schenectady	160	Seneca Falls	344
Amsterdam	186	Watertown	347
Fonda	206	Geneva	352
Little Falls	224	Canandaigua	369
Herkimer	231	Victor	380
Utica	248	Pittsford	390
New Hartford	252	Rochester	396
Oneida Castle	271	Scottsville	408
Oneida	272	Caledonia	413
Wampsville	274	Leroy	420
Canastota	276	Stafford	424
Chittenango	284	Batavia	430
Fayetteville	289	East Pembroke	437
Syracuse	299	Pembroke	442
Camillus	307	Clarence	452
Sennett	316	Williamsville	461
Adrian	325	Buffalo	471

From Buffalo the road leads along the lakes—

To—	Miles	To—	Miles
Atchafalpa	482	Obelin	701
Waukegan	485	Kipton	707
Evans Centre	495	Wakeman	718
Farham	501	Norwalk	725
Irving	503	Monroeville	730
Silver Creek	506	East Monroeville	732
Sheridan	513	Bellevue	740
Fredonia	518	Clyde	748
Barckton	525	Freemont	756
Westfield	533	Hessville	763
Forsyth	540	Woodville	770
Ripley	543	Genoa	775
Northeast	548	Toledo	785
Mooreheads	554	Gava	804
Harbor Creek	561	Swampton	810
Wesleyville	567	Delta	817
Erie	566	Wauseon	825
Fairview	577	Archbold	836
Girard	583	Stryker	845
Conneaut	596	Bryan	854
North Kinsville	604	Edgerton	865
Geneva	620	Butler	873
Unionville	624	Waterloo	881
Madison	627	Sedan	885
Painesville	638	Coruna	888
Mentor	644	Kennelsville	895
Willoughby	648	Brimfield	902
Cleveland	667	Wanaka	907
Finney's Corner	677	Ligonier	912
North Ridgeville	688	Millersburg	918
Elyria	693	Goshen	921

Elkhart	932	Westville	987
Oscola	939	Valparaiso	990
Mishawaka	944	Wheeler	998
South Bend	949	Hobart	1,003
New Carlisle	963	Highlands	1,015
Bryan	970	Hammond	1,022
La Porte	976	South Chicago	1,030
Dorr Village	980	Chicago	1,043

Specific directions from Chicago west as to exact road have never been compiled. The towns touched, however, in the progress to Clinton, Ill., are as follows:

To—	Miles	To—	Miles
Oak Park	1,051½	Franklin Grove	1,131
Elmhurst	1,058½	Nachusa	1,136
Wheaton	1,068	Dixon	1,141
West Chicago	1,073	Nelson	1,147
Geneva	1,078½	Sterling	1,152½
La Fox	1,083½	Galt	1,156
Elburn	1,087	Rock Island	1,158½
Maple Park	1,093½	Round Grove	1,161½
Cortland	1,098½	Morrison	1,166½
De Kalb	1,101½	Union Grove	1,170½
Malta	1,117½	Fulton	1,178½
Creston	1,112½	Clinton	1,181
Rochelle	1,117½		
Ashton	1,126½		

The Mississippi river must be crossed here to Comanche, Iowa, and the cars will then proceed to Council Bluffs, Iowa. Here again the directions may only be given as to the points through which the road leads. They are as follows:

To—	Miles	To—	Miles
Comanche	1,185½	Lamolle	1,339
Low Moor	1,190½	State Centre	1,346
Malone	1,195	Colo	1,353½
De Witt	1,200	Nevada	1,360½
Grand Mound	1,208	Ames	1,369½
Calamus	1,211½	Ontario	1,372½
Whetland	1,215½	Jordan	1,378½
Lowden	1,220½	Boone	1,386½
Clarence	1,227½	Ogden	1,394½
Stanwood	1,232½	Grand Junction	1,405½
Mechanicville	1,238	Jefferson	1,412½
Lisbon	1,245	Scranton	1,421½
Mount Vernon	1,246½	Glidden	1,431½
Bertram	1,253	Carroll	1,438½
Cedar Rapids	1,262½	Maple River Jct.	1,443
Fairfax	1,270½	Arcadia	1,448½
Norway	1,277½	Vall	1,458
Watkins	1,281½	Denison	1,466½
Blairtown	1,286½	Dow City	1,476
Lurne	1,292	Woodbine	1,484
Belle Plaine	1,297	Logan	1,501½
Chelsea	1,303½	Missouri Valley	1,510
Tama	1,313½	Loveland	1,514½
Montour	1,320½	Honey Creek	1,519½
Le Grand	1,323½	Crecent	1,524½
Quarry	1,326	Council Bluffs	1,531½
Marshalltown	1,331½		

Here the Missouri river must be crossed to Omaha, Neb., where the distance is 1,536 miles. The trip across Nebraska in the westerly direction is still without information as to road, save as it leads from town to town. The towns are as follows:

To—	Miles	To—	Miles
South Omaha	1,540	Millard	1,556
Gilmore	1,546	Elkhorn	1,565
Papillion	1,551	Waterloo	1,567

Valley	1,571	Wood River	1,765
Mercer	1,577	Shelton	1,713
Fremont	1,582	Gibson	1,719
Ames	1,589	Buda	1,727
North Bend	1,597	Kearney	1,732
Rogers	1,604	Oodesa	1,741
Schuyler	1,612	Elm Creek	1,747
Benton	1,620	Overton	1,756
Columbus	1,627	Lexington	1,767
Duncan	1,635	Cozad	1,781
Silver Creek	1,645	Willow Island	1,786
Havens	1,651	Gothenburg	1,792
Clarks	1,656	Brady Island	1,804
Thummal	1,661	Maxwell	1,813
Central City	1,667	North Platte	1,827
Paddock	1,671	Hershey	1,840
Chapman	1,678	Sutherland	1,846
Lockwood	1,684	Paxton	1,858
Grand Island	1,690	Ogallala	1,875
Alda	1,697		

Here the state line between Nebraska and Colorado is passed. The first place across the Colorado line is:

To—	Miles	To—	Miles
Big Springs	1,897	Lodge Pole	1,932
Julesburg	1,908	Sidney	1,950
Chappell	1,923		

Then the route leads back into Nebraska—

To—	Miles	To—	Miles
Brownson	1,958	Bushnell	1,996
Potter	1,969	Pine Bluff	2,009
Kimball	1,987		

And then on into Wyoming, approaching the highest altitude on the trip. The stops in Wyoming are:

To—	Miles	To—	Miles
Egbert	2,020	Wamsutter	2,257
Hilledale	2,032	Bitter Creek	2,300
Durham	2,038	Point of Rocks	2,320
Archer	2,040	Rock Springs	2,345
Cheyenne	2,052	Green River	2,360
Granite Canon	2,071	Granger	2,380
Buford	2,079	Church Bluffs	2,402
Sherman	2,088	Hampton	2,406
Hermosa	2,094	Elkhurst	2,413
Laramie	2,100	Carter	2,419
Lookout	2,137	Antelope	2,424
Rock River	2,148	Bridge	2,429
Medicine Bow	2,166	Leroy	2,434
Allen	2,170	Spring Valley	2,441
Hanna	2,186	Altamont	2,447
Dana	2,195	Knight	2,452
Fort Steele	2,211	Evanston	2,460
Rawlins	2,226	Wabash	2,475
Creston	2,245	Castle Rock	2,480

Then the state line dividing Wyoming and Utah is reached, and the road leads on—

To—	Miles	To—	Miles
Echo	2,496	Lakeside	2,584
Morgan	2,512	Newfoundland	2,612
Uintah	2,529	Lucin	2,638
Ogden	2,536	Tecoma	2,649
Promontory Point	2,560		

Once again the state line is crossed, this time into Nevada. The road heads for—

To—	Miles	To—	Miles
Montello	2,650	Deeth	2,727
Cobre	2,671	Hallock	2,740
Wells	2,707	Elko	2,763

EIGHTEEN CARS IN BRIARCLIFF CUP RACE

NEW YORK, Feb. 4—That the proposed Westchester stock car race for the Briarcliff trophy will be run as scheduled on April 24 seems now assured. Though the entries closed on Saturday night at midnight, following the usual custom those received later by mail bearing the closing date were accepted. Eighteen nominations in all have been made. The official list with the probable drivers added follows:

Car	Entrant	Driver
Renault.....	Paul La Croix....	Bernin
Isotta.....	C. M. Hamilton....	Pooler
Isotta.....	C. M. Hamilton....	Harding
Isotta.....	J. H. Tyson.....	Strang
Lozier.....	H. A. Lozier.....	Michener
Lozier.....	H. A. Lozier.....	Mulford
Hol-Tan.....	C. H. Tangeman....	Fosdick
Simplex.....	C. A. Singer.....	Tracy
Flat.....	E. R. Hollander....	Cedreno
Flat.....	E. R. Hollander....	
Apperson.....	S. B. Bowman.....	
Panhard.....	A. Massena.....	Robertson
Allen-Kingston	A. Hammerstein....	Campbell
Maja.....	J. S. Brown.....	Murphy
Thomas Flyer..	H. S. Hout.....	Roberts
Stearns.....	H. W. Whipple....	Oldfield
Stearns.....	F. B. Stearns.....	Leland
Stearns.....	Wyckoff, Church	
	and Partridge..	Vaughan

The committee has decided to accept further entries provided an extra fee of \$50 per week be paid, dating from the time of the announced closing of the list for the big contest on February 1.

The question of the distance of the race has not yet been finally decided, the choice in a word lying practically between 300 and 400 miles.

Reports from Savannah state that five entries in all have been received. In addition to the original nominations of an Apperson and a Premier the Appersons have named a runabout in the class for small cars with less than 375 cubic inches piston displacement and C. M. Hamilton two Isotta Fraschini, one to be driven by Al Poole and the other by H. N. Harding. It is also given out here that S. H. Mora has entered a six-cylinder Mora for the race for cars of over 575 cubic inches. The Savannah committee writes it has been promised ten entries in addition to those already made, but will not mention names until the nominations have formally been made by the prospective entrants.

A conference of the special committee for the race, composed of representatives of the racing and technical boards of the A. A. A., was held on Saturday in Chicago, and the following decision was rendered with regard to one of the rules concerning

which some question has arisen as to its interpretation, which refers to the eligibility of makers entering cars and cars entered, as follows: "Any maker to be eligible to enter one or more cars must have manufactured at least fifty cars, of all models, during the period of 1 year prior to February 1, 1908, and included in this output must have been five cars of each of the models entered."

It is possible that there may be a slight change in the rules of one of the shorter races to be held on March 18. The special committee is now considering the matter.

Every effort is being made by Chairman Morrell and Secretary Butler, of the A. C. A., to secure a sufficient list of entries to justify the running of the Ormond meet. F. J. Wagner, the official starter, is assisting in the thorough canvass that is being made of makers and owners. The entries so far received for the big A. C. A. cup race are the Fiat Cyclone, the Christie, the new Renault and a Vanderbilt Haynes runabout. The contest committee will meet tomorrow night. The date of the closing of entries is February 15.

TEST FROM NEW YORK TO PARIS, WHICH IS SCHEDULED TO START FEBRUARY 15

Carlin	2,785	Rye Patch	2,954
Pallsade	2,794	Lovelock	2,973
Be-o-wa-we	2,811	Parran	3,008
Battle Mountain	2,844	Hazen	3,032
Golconda	2,886	Derby	3,051
Winnemucca	2,900	Sparks	3,075
Mill City	2,931	Reno	3,078
Humboldt	2,940		

From Reno the route follows the Virginia and Truckee railroad to Carson City. It runs			
To—	Miles	To—	Miles
Anderson	3,082	Franktown	3,098
Hufakers	3,085	Mill Station	4,001
Browns	3,090	Lake View	4,006
Steamboat	3,092	Carson City	4,009
Walshoe	3,094		

From Carson City it follows the route of the Nevada and California road, leading:			
To—	Miles	To—	Miles
Empire	4,014	Shurtz	4,083
Mound House	4,018	Gillis	4,090
Dayton	4,024	Walker	4,098
Clifton	4,036	Hawthorne	4,112
Fort Churchill	4,045	Luning	4,121
Wabuska	4,056	New Boston	4,128
Cleaver	4,062	Sodaville	4,149
Mason	4,069	Rhodes	4,154
Rio Vista	4,074		

From Rhodes the Tonopah and Tidewater system is followed, going			
To—	Miles	To—	Miles
Coaldale	4,174	Klondike	4,232
Blair Junction	4,181	Columbia	4,238
McLean	4,188	Goldfield	4,245
Goldfield Junction	4,198	Beatty	4,319
McSweeney Jet	4,222		

After leaving Beatty the road passes out of Nevada into southern California, still following the Tonopah and Tidewater. The first town reached is Front. The route leads			
To—	Miles	To—	Miles
Front	4,429	Berry	4,502
Raven	4,475	Soda Lake	4,511
Alta	4,478	Coucou	4,519
Silver Lake	4,495		

At Coucou, the San Pedro, Los Angeles and Salt Lake railroad is met and followed			
To—	Miles	To—	Miles
Scott	4,524	Blyth	4,547
Afton	4,529	Kouns	4,558
Dunn	4,533	Otis	4,567
Field	4,538	Daggett	4,571

At Daggett the Atchison, Topeka and Santa Fe road is followed westward			
To—	Miles	To—	Miles
Barstow	4,580	Rich	4,626
Hinkley	4,588	Rodriguez	4,638
Hawatha	4,598	Bissell	4,642
Jimney	4,607	Mojave	4,651
Kramer	4,615		

At Mojave another skip is made to the Southern Pacific route through			
To—	Miles	To—	Miles
Rosamond	4,664	Ravenna	4,699
Lancaster	4,675	Russ	4,705
Palmdale	4,684	Larg	4,709
Harold	4,686	Humphreys	4,713
Vincent	4,690	Honby	4,717
Acton	4,696	Saugus Station	4,720

Here the road leads on to Los Angeles if it be desirable to go there, but by following the Santa Clara river a big cut-off can be made, leading

To—	Miles	To—	Miles
Castair	4,726	Saticoy	4,783
Kemp	4,731	Montalvo	4,786
Camulos	4,738	Edfu	4,788
Piru	4,742	Ventura	4,791
Backhorn	4,745	Dulah	4,793
Cavin	4,751	Sea Cliff	4,796
Fillmore	4,758	Punta Gorda	4,799
Brownstone	4,762	Carpinteria	4,803
Sepe	4,767	Ortega	4,807
Carmicle	4,770	Summerland	4,812
Santa Paula	4,773	Mason Street	4,817
Blanchard	4,775	Santa Barbara	4,820
Haines	4,779		

The last 40 miles before reaching Santa Barbara have followed the Pacific coast. It proceeds north			
To—	Miles	To—	Miles
Goleta	4,826	Tongair	4,890
Elwood	4,830	Narrows	4,896
Naples	4,834	Antonio	4,900
Orella	4,841	Casmalia	4,902
Tajiguas	4,843	Shumann	4,905
Gaviota	4,850	Waldorf	4,908
Drake	4,855	Guadalupe	4,913
San Augustine	4,858	Bromela	4,917
Conception	4,864	Callender	4,920
Sudden	4,872	Oceano	4,923
Arguello	4,877	Grover	4,925
Honda	4,881	Edna	4,931
Surf	4,886	San Luis Obispo	4,937

From San Luis Obispo the coast is left. The road goes

To—	Miles	To—	Miles
Goldtree	4,940	Coburn	5,031
Serrano	4,943	Metz	5,038
Cuesta	4,947	Riverbank	5,042
Santa Margarita	4,954	Soledad	5,046
Eaglat Station	4,959	Camphora	5,049
Atascadero	4,961	Gonzales	5,054
Asuncion	4,964	Penoir	5,057
Templeton	4,967	Chualar	5,060
Paso Robles	4,973	Spence	5,064
Wellsona	4,978	Spreckel's Junction	5,067
San Miguel	4,983	Sallinas	5,071
Nacimienta	4,989	Graves	5,073
Bradley	4,994	Cooper	5,076
Wunpost	5,000	Castroville	5,079
Getty	5,003	Elkhorn	5,075
San Ardo	5,007	Pajaro	5,089
Upland	5,012	Gilroy	5,100
Welby	5,020	San José	5,138
King City	5,026		

From San José the last stage of the route is entered. It leads

To—	Miles	To—	Miles
College Park	5,140	Bellmont	5,164
Santa Clara	5,142	Beresford	5,165
Sunnyvale	5,145	San Mateo	5,168
Mountain View	5,147	Burlingame	5,170
Castro	5,151	Mill Brae	5,173
Mayfield	5,154	San Bruno	5,175
Palo Alto	5,156	Tanforan	5,178
Mono Park	5,157	Bandon	5,181
Fair Oaks	5,159	Emanuel	5,184
Redwood City	5,160	Colma	5,187
San Carlos	5,162	Spring Valley	5,188

Ocean View	5,189	San Francisco	5,190
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Arriving in San Francisco the motorista will leave by boat for Seattle, transshipping there to the steamers which will carry them on to Valdez, Alaska. This section of the race will lead into the interior until the Yukon is reached, and then will follow the Yukon down to a point from which Nome can be reached. The distances along the government roads to Fairbanks are clearly defined, and the trail is marked by the United States government for the purposes of the posts sent through with the mails. The distances from place to place, starting at Valdez, are as follows:

To—	Miles	To—	Miles
Comfort Camp	10	McDevitt's	223
Workman's Roadhouse	18	Parker's	237
Parmigan Drop	26	Donnelly's	249
Beaver Dam	34	Tingley's	272
Tiekhill	48	Sullivan's	293
Ernestine	60	Little Delta	314
Tonina Roadhouse	77	King's	324
Willow Creek	90	Munson's	333
Copper Centre	102	Clark's	334
Tasina	114	Thirtymile	341
Gulkana	132	Piledriver	346
Creek	156	Byler's	356
McMullin's	172	Johnson's	358
Paxton's	188	Murray's	365
Yost's	206	White's Roadhouse	367
Casey's Cache	216	Fairbanks	376

From Fairbanks the road leads on to Tanana, a distance of 158 miles further, leading through

To—	Miles	To—	Miles
Chena	388	Baker	474
Tolovana	444	Tanana	534

From Tanana, the descent of the Yukon is begun, along the ice in the river it is expected, for 301 miles, to Unalakleet

To—	Miles	To—	Miles
Mouse's Point	554	Nulato	700
Kofrine's	614	Kaitag	735
Malota	640	Old Woman	775
Kayukak	680	Unalakleet	835

From Unalakleet the road is again across country, following the edge of Norton Sound. On this last stage it leads

To—	Miles	To—	Miles
Shakolik	880	Bluff	1,036
Bonanza	908	Solomon	1,062
Isaac's Point	948	Nome	1,098
John Dexter's	1,008		

The passage across the Bering strait will be arranged from Nome City. The landing point in Siberia will be East Cape. From there an 11,350-mile stretch is ahead of the drivers. The distances of the principal stages of the journey are:

From East Cape on the Bering strait, along the shores of the Arctic ocean to the bay of Kolutschin and the bay of Tschau.....		1,000
Thence to the mouth of the Kolyma river.....		600
Through Nishna, Kolymak, and Svedne Kolymak.....		324
Thence to the city of Verkhofansk.....		1,500
Then on to Yakutsk on the Lena river.....		620
Following the Lena river to Irkutsk on the Siberian railroad.....		2,000
From Irkutsk, along the line of the Siberian railroad to Moscow.....		3,500
From Moscow to Paris is a simple matter of.....		1,800



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A GOVERNMENT GOOD ROADS MEASURE



ILLIONS upon millions of dollars have been sunk in river and harbor improvements by the federal government; ship-building has been subsidized; railroads have been most liberally assisted—but your Uncle Samuel has never put out a dollar for highways, even to maintain the roads that belong to him.

The federal government knows all about good roads because it receives reports from its consuls in France, England and other countries; it knows all about bad roads because it has had the matter brought to its attention most forcibly during the past quarter century; and it would know more about them if it came to a matter of moving troops.

Federal officials know all about what a burning shame such a condition of affairs is; they have been prodded hard enough and long enough to be qualified as road experts; they know they have spent millions of dollars foolishly and that they have displayed favoritism; they know they have neglected every user of the public highways—that they have cost the farmers of their country billions of dollars, when the farmers are the mainstays of the country. There are other users of the roads besides the farmers, and the inattention of the federal government has cost these people vast sums of money in addition to what politics and graft and inattention have cost the farmers.

Today congress has before it a proposition in the shape of a bill introduced by Representative Currier which if passed—if passed, mind—will bring about a measure of relief for which the country will in a few years sing songs of praise. The scheme as presented in the bill looks good and Representative Currier means well; the only thing that does not look good is its chance of becoming a law, much as its necessity appears.

A highway federal commission of three road experts, the expenditure of several millions of dollars each year in the states, a complete system of national highways—all this is embodied in the bill. There is no great amount of detail in the bill other than that above, but it is sufficient to start the federal government doing something it should have done decades ago, and which, had it been so begun, would have been the means of this country having today a reasonably decent system of highways from one end of the land to the other. Had this system been in vogue a quarter of a century ago the farmer and the merchant and the country would be in even

better condition than they are—and they are not in a very bad condition, either.

Other road bills have been introduced in congress; they have been measures that would have brought about a material change in the condition of the highways had they become laws—but they were side-tracked, just as Mr. Currier's bill will be unless a strong effort is made to put it through both branches of congress. The bill in question is before a committee, which will in all probability hear what people have to say on the matter. Then the committee will do just as it pleases and will likely bury it in some pigeonhole, where it will become dust-covered.

If the bill is a desirable one—Motor Age has not seen the full text, by the way—there is one way to impress upon congress the necessity of passing it, and that is for every voter in the country to take up the question with his congressman and demand that he give some attention to the highways of the country in return for all the favors that have been showered upon railroads and harbors and other federal beneficiaries. Begging will do no good—that has been tried too often with no results. It is worth while to take a chance and do a little demanding on the part of the constituents of these gentlemen who represent the people and who are in Wash-

SMALL COMMERCIAL MORTALITY SHOWN



USINESS conditions, generally speaking, appear to be reasonably healthy; so far as the motor car industry is concerned they seem to be improving, as Motor Age has before shown. There never was any real cause for extreme alarm, although it will be shown that curtailment of outputs was sensible in the face of a scare; in fact, curtailment may prove to have been the real savior of the business. What is the condition of business at large and what is the condition of the motor car industry? There were comparatively few failures even for a panicky period; no industry suffered less, a fact too well known to be repeated. The general condition of the country—which in a degree measures the condition of the motor car industry—is well shown by the Saturday Evening Post, which says:

"Now, commercial failures, measured by total liabilities involved, were thrice as great as the average of the 5 preceding years. But the difference is almost wholly accounted for by the embarrassment of a very few big concerns, having plenty of

ington for the theoretical purpose of doing the greatest good for the greatest number.

Every farmer, every owner of a horse-drawn vehicle, every motorist and every cyclist ought to be sufficiently interested in such a bill as to appoint himself a committee of one to impress upon his congressman the necessity for such legislation, and he should demand that his representative vote for the passage of the measure and aid in its passage in any other way. The strongest kind of help will be forthcoming from the press of the country—daily, weekly and monthly. A sharp campaign on the part of the voting population will have the effect of bringing any congressman to time, whether he personally favors the bill or not. He will do as his people tell him provided they tell him in no uncertain manner.

Motorists are wont to complain about what they have not and what they ought to have; but it is singularly true they will not brush aside sufficient selfishness to become a part of any band that has for its purposes the bettering of conditions that will be beneficial to all. Plainly speaking, this means that the average motorist will not go out of his way to help all motorists by joining and pushing the work of some organization, local, state or national in scope. If there was ever need for strength of motoring organizations, that need is now, to help pass this bill.

good assets, but caught short of ready money. The number of concerns that failed was only 4 per cent above the average of the 5 preceding years; and of all concerns in business, as reported by Bradstreet's, only seven-tenths of 1 per cent failed—the smallest proportion, with the single exception of 1906, in 27 years. Actual assets of failed concerns amounted to 72.3 per cent of total liabilities. This is the highest proportion ever reported, comparing with an average of little over 50 per cent in the 5 preceding years. Already the Westinghouse companies—the most important commercial failures of the year—are well on the way to a solvent footing.

"The commercial death rate was only half that of 1893. Total liabilities of concerns that failed, it is true, were only 10 per cent less. But the total number of concerns in business was 40 per cent greater; and their combined assets must have been at least a hundred per cent greater. No exact statement on that head is possible; but bank deposits were 300 per cent greater in 1907 than in 1893." Does this look like hard times?



CURRENT COMMENT



GOVERNMENT figures just published bear out the statement of Motor Age that the export figures in the motor car industry exceed the figures given by the Chicago Tribune for the total value of the motor cars put out for the year 1907, leaving the value of the home consumption to represent the Tribune's error. Last year there were 2,894 cars exported, the value being \$5,120,963, while parts to the value of \$636,009 were sent out of the country. The total exports of cars and parts in 1906 was \$4,409,186, so that the growth of the export business in a single year is represented in figures by \$1,347,786, which certainly should be satisfactory to the industrial world as well as to the industry.

GEORGE N. PIERCE will hereafter be unknown to the motor car world, except in so far as his name goes, for his retirement from the Pierce company will not, in all likelihood, carry away the name. He has been a prominent figure in both the bicycle and motor car industries and through his sterling business ways has aided in building up one of the most substantial units of the industry. No one in the business will wish him other than long life and happiness in his retirement.

AFTER what the groundhog had to say in the matter of weather predictions, motor car dealers will gladly welcome a little show business just to break the monotony of a dull month.

The Week in Brief

Entries close for Briarcliff cup race, with eighteen nominations in hand; Savannah's prospects for successful meet declared to be good; hard scramble to get entries for the Ormond races.

Congressman Currier fathering bill which asks appointment of national good roads commission and an appropriation of \$50,000,000 by the government.

Long Island Automobile Club will hold 1-day midwinter fuel test from Brooklyn to Montauk Point and return February 25.

S. D. Waldon and party make adventurous trip through Cuba in a Packard; roads anything but boulevards.

Foreign cars on way to America to start in New York-Paris endurance test February 15.

Successful shows are being held in Providence, R. I., and Kansas City, Mo., this week.

Government reports show increase of more than million dollars in exports for 1907.

George N. Pierce severs his connection with concern making Great Arrows.

Oldsmobile Mud Lark making rapid progress toward New Orleans.

IS IT A MOTOR CYCLE?



THIS IS THE TROUBLE MAKER

When does a motor cycle plus a buggy equal a motor car? That is the all-important question just now being agitated in motor and police circles since E. V. Hill, sales manager for the Royal Motor Works, of Worcester, Mass., put it up to the police and came near being arrested as a lunatic. The Worcester concern played horse with one of its product a few days ago, strapping a motor cycle to the shafts of a buggy containing three passengers and galloping away with it. Legal lights in the Worcester Automobile Club at once raised the point that a buggy so propelled became at once a motor car and was therefore amenable to the laws of Massachusetts relating to such vehicles. Hill was unable to combat the argument. He wished to repeat the experiment elsewhere in the state without courting trouble or running danger of arrest, so he dropped into police headquarters for information.

"If I hitch a motor cycle to a buggy, will I come under the motor vehicle law and have to pay the license fee and display a number on the buggy?" he asked of the officer in charge.

"What's that?" sharply asked the cop as he eyed Hill suspiciously. Hill repeated his query and added: "You see, I want to give a public demonstration, sort of play horse with the motor cycle."

"Say, young fellow," jerked out the bluecoat with rising heat, "have you been drinking, are you crazy or are you trying to kid me? You've come to the wrong place to try that sort of thing. You can't play horse with me."

The lawyers take sides on the question; the police give it up. Who will settle it?

CHICAGO has definitely decided to impose a wheel tax on all vehicles for the privilege of using the streets of the city, notwithstanding the supreme court's ruling to the effect that people have a right to use the streets and do not have to pay for the privilege of using them. The ordinance goes into effect May 1, which gives motoring organizations and individuals every opportunity to prepare a case to be finally taken to the supreme court if necessary. If the motorists of Chicago do not fight this to a finish they deserve to pay the tax that is scheduled.

WHETHER or not it comes out of the big end of the horn financially the Westchester road race ought to prove a good sporting event and a good test for stock cars. With eight foreign and ten American cars in the event there will be much speculation as to the outcome. What racing cars can do and what stock cars can do may be two different things, and there are good enough Americans to believe this country will not have to take a back seat in this contest between cars made abroad and those made on this side of the ocean.

SOME day all these municipal and state bodies of motorphobists will awaken to the fact that the owner of a motor car is an ordinary citizen, having equal rights with other ordinary citizens and not a target for grafting officials. It may take time to bring them around, however.

Coming Motor Events

Cleveland Show—Sixth annual exhibition of Cleveland Automobile Dealers' Co. in Central armory, Cleveland, O., February 17-22.

Florida Run—Jacksonville-Miami test, March 11-16, inclusive.

Bay State Reliability—Endurance test of Bay State A. A. over Boston-Providence-Worcester route, February 22.

Coast Hill-Climb—Pasadena-Alhambra hill-climb of Automobile Dealers' Association of Southern California, February 22.

Denver Show—Three-day show in Denver, April 6, 7 and 8; G. A. Wahlgreen.

Canadian Shows—National motor car and sportsmen's exhibition in Toronto, March 21-23; third annual show in Montreal, April 4-11. R. M. Jaffray, Toronto.

Ormond Meet—Beach tournament at Ormond Fla., under auspices of Automobile Club of America, March 2-9.

Savannah Road Races—Two days of road racing at Savannah, Ga., March 18-19.

Westchester Road Race—Stock car chassis road race in Westchester county, N. Y., for Briarcliff cup, April 24.

Targa Florio—Third annual Sicilian road race, May 10.

Chicago Hill-Climb—Chicago Motor Club's third annual hill-climb, May 15.

WINTER MOTORING—NORTH AND SOUTH



MIDWINTER GLIMPSES OF HUDSON AND PALISADES FROM A PREMIER

M IAMI, FLA., Feb. 1.—The task of blazing the way for the Jacksonville-Miami reliability run which starts from Jacksonville March 11, undertaken by James Laughlin III., of Pittsburg, in a Cleveland car, was successfully completed last Wednesday night, when Laughlin and his companions drove into this city, having covered 371.8 miles, most of the way over roads on which a motor car never had been seen. This pathfinding car was sent out to mark the route for the test which will be sandwiched in between the Ormond beach races and the road events at Savannah, the latter set for March 18 and 19. Already, it is said, Promoter Morgan has assurances of the entry of two Maxwells, a brace of Cadillacs and an Elmore, Ford and Winton.

Laughlin started his trip January 23, so he was nearly 6 days on the job. His 40-horsepower Cleveland car was fitted with Continental tires and the party went through without a puncture or a blowout, it is reported by the adventurers, who enjoyed roughing it in the wilds.

Laughlin drove all the way himself and was a tired man at the completion of the journey, as there was considerable driving done at night, while every minute of daylight was utilized. There was little sleep in the 5 days 8 hours of the trip. At the outset a spring, weakened by a former break, gave way between St. Augustine and Ormond. This was bound up in the woods and at Ormond was hurriedly repaired—supposedly; again it gave out near New Smyrna and by an all-night job Saturday night, the spring was properly fixed and thereafter gave no trouble. There was no attempt to make time, for the danger of becoming lost worried the pathfinders, for the roads followed never had been gone over in a motor car, and for the greater part of 150 miles were but faintly traced through the pine woods. Grass covered

the roads for miles, coming as high as the radiator, and stumps were concealed in the grass. The stumps gave more trouble, perhaps, than anything else, for it was the duty of the pathfinders to either remove them or mark them plainly.

The objects of the trip, the marking of the road, the logging of the route for a route book, the building of bridges where necessary and the construction of fords over streams where bridges had been washed away, were carried out to the letter, causing delays at vital times. A complete camping outfit was carried, together with axes, shovels, spades and other motor paraphernalia. Groceries in large bags were strapped to the car in case it might be necessary to camp; but fortunately it was possible to reach civilization each evening, although oftentimes it was very late at night.

During their trip the pathfinders drove through about thirty lakes. There always was present the danger of sinking in these lakes, but the course laid that way, and there was no other method of traveling. Several bridges were constructed and



OLDSMOBILE MUD LARK, DRIVEN BY RALPH OWEN

properly marked; stumps were removed by the score. Sand was driven through for miles on low gear and very little high gear work was done for the 140 miles of the trip from Grants to West Palm Beach. The party stopped en route at St. Augustine, Ormond, New Smyrna, Grant, Jupiter and made the 90-mile run to Miami for the finish. At one stretch the pathfinders traveled for 53 miles where but one house was found. In that stretch a moccasin snake, a diamond back rattler, a skunk, a crane and a hawk were the only living things seen. Through this desolate district Reuben Carlton, who owned the one house and had punched cattle for years in the apparently trackless waste, guided the party with unerring skill. His great knowledge of the route, which twisted and turned until none knew where he was at, excited wonder with the pathfinders who after their escape went down on their knees to him figuratively and in reality. In that 55 miles of going, from Fort Pierce to Jupiter via the Capron trail, unnumbered cross paths were met. The pathfinders followed for miles, paths absolutely without markings and deeply covered with long wiry grass. Carlton apparently was as familiar with the route as if traveling the well-marked city streets of a large city in which he had been raised from boyhood.

On the pathfinding trip the hardest day's work was from Grant to Jupiter, a distance of nearly 100 miles. Grant consists of one house and a hotel; it was reached late at night from New Smyrna and the party retired about 9 o'clock at the Ridgeland. Arrangements were made with some young fishermen to go up in a launch to the ferry across the Sebastian river and be there when the car arrived to aid it across. L. V. Jurgenmeyer then was engaged as guide. In the deep woods going to the ferry, a distance of but 7 miles, the party became lost at 2 o'clock in the morning and ran around for 2 hours trying to discover a road to lead them out. A house finally was found and a second guide secured who showed the way to the ferry, where by hand-power the car was ferried over. At Vero a second guide was secured and after being stuck in the sand several times the car reached Fort Pierce at about 8:30, running the 20 miles in 7 hours. Here Carlton joined the party and the deep woods were entered at once in the search for the Capron trail.

The route lay then for 30 miles over an apparently roadless course to a small stream, where a bridge had been washed away and where it was necessary to construct a ford by digging away 8-foot banks on either side. Roots had to be hewed away and

both banks had to be filled in; the car lunged down almost on its nose and then up. Laughlin alone was able to keep a seat in it. No block and tackle was used here or elsewhere on the journey. Later on in the day a house came in view and then the trip was again through the pine woods for nearly 25 miles.

Bridges were constructed of logs at other points. Jupiter was reached at a late hour only to find accommodations for but three of the five in the party. Two slept in the tent by the car; the following day 20 miles of hard going was completed, which finished the bad portions of the trip.

An interesting part of the journey was the trip through the camp of the vultures, the turkey buzzards' roost in Florida. Thousands and thousands of the birds rose in the air as the motor car passed through traveling 2 miles an hour in the deep swamp. At a point $4\frac{1}{2}$ miles from West Palm Beach the shell road was met and at West Palm Beach the special road constructed by H. M. Flagler to connect Palm Beach and Miami made as good going as could be found in Florida.

Briefly, touring as far as Titusville or Rock Ledge, either one, may be made a real pleasure and novelty, but beyond these points it is hard traveling and dangerous. No man not posted on touring and its dangers should risk this trip.

The distance for the 5 days of the coming test were found to be: Jacksonville to Ormond, 88.7 miles; Ormond to Rock Ledge, 74.1 miles; Rock Ledge to Fort Pierce, 75.4 miles; Fort Pierce to Palm Beach, 67.6 miles, and Palm Beach to Miami, 70 miles, a total of 471.8 miles.

SNOW RIDE IN A PREMIER

New York, Feb. 1—To the accompaniment of a brand new whirring motor, the honk-honk of the horn and a perfect winter's day, a party of five enthusiastic motorists, bundled in heavy wraps and furs, defied the chilling blasts of midwinter and a foot of recently fallen snow and charged upon the overpopular course overlooking the Hudson on the New York side. If this drive is enchanting in the summer, with its beautiful green scenery and overhanging cliffs on one side and the Hudson river and Palisades on the other, the trip in January cannot be described in a manner to do it justice. True it may be that the identical river, Palisades and jutting cliffs are there in the winter, but the scene and general surroundings are entirely different and to those in the party it was far more fascinating than it had ever been before.

Continually before the motorists was the snow-laden highway, which had been disturbed by only a few sleighs and other horse-drawn vehicles. They were surrounded at times with nothing but crusted and icied rocks, trees and evergreens on one side, while on the other was the beautiful Hudson slowly winding down past the Palisades and filled with broken ice



BETWEEN ST. AUGUSTINE AND ORMOND

and snow which was coming down stream from up country to be emptied into the Atlantic. Just beyond the river were those towering giants of earth and rocks—the Palisades—which have become to be known the civilized world over. One might say, "Yes, I have seen them many times." True, but probably it was when the day was warm and sultry and one rode over this highway so that he might breathe in whatever fresh air the Hudson had to offer. But it was different the day after a blizzard in January. Have you ever seen the Palisades enwrapped in ice and snow, appearing like huge crystal mountains, soiled here and there with old stumps of trees projecting upward and outward; besmeared at intervals with black and darkened rocks? If such a trip has been missed, then one of the grandest pieces of scenery in the neighborhood of Manhattan has escaped your exclamations and approval.



CLEVELAND PATHFINDERS CROSSING FLORIDA SWAMP ON WHITE MOTOR TREESTLE

The trip of this particular party continued as far as Yonkers, and every inch of the way was one of grandeur and surprise and admiration. The Premier, which was taken from the floor of the salesrooms purposely for the occasion, behaved like a thoroughbred. It plowed through the 2 and 3-foot drifts as if it was made for nothing less than a snow plow. The rear wheels were minus chains or any other kind of anti-skidding devices, but regardless of this the great red car surmounted all difficulties and scampered uphill and down dale as if the footing was of the best. Naturally, under the conditions, the machine skidded more or less, throwing the snow several feet away, but this added to the enjoyment and made one feel that he was coasting on a toboggan rather than riding in what is commonly known as a summer rig.

This trip proved without a doubt that the present day motor car is as serviceable in winter as in the summer. It proves unquestionably that a foot of snow on the level and drifts several feet high, which had fallen less than 12 hours previous, are no barrier for the modern American car. In other words, the motor rig is now a year-round car, as is amply evidenced by photographs taken on the trip.

PROGRESS OF THE MUD LARK

Elizabethtown, Ky., Feb. 4—In the 8 days which have elapsed since Ralph Owen and his party in the Oldsmobile Mud Lark left New York city on a trip to New Orleans, the tourists have made rapid progress and are considerably ahead of the schedule. They reached this point tonight from Bardstown and tomorrow night they expect to be in Nashville. They have been in Cleveland, Cincinnati and Columbus and so well has the car traveled that it is expected New Orleans will be reached February 14 after a 2,000-mile journey. So far the Mud Larkers have been cordially received all along the way.

SHOW IN KANSAS CITY

Second Annual Exhibition 40 Per Cent Larger Than First One—Crowd Opening Night

Kansas City, Mo., Feb. 4—Forty per cent more cars are on exhibition in the show that opened in Convention hall last night than in the exhibition of a year ago and from 4,000 to 5,000 people turned out for the opening. About 125 cars are on view and the early indications are that the show, which is to continue throughout the week, will be a success. The display of accessories is a fine one and taken all the way through it would be hard to point out where the promoters have overlooked a bet. Not a foreign car is to be seen on the floor and those dealers who are exhibitors claim there is every prospect of considerable business being done.

Among the novelties shown are two miniature motor cars—a touring car and a limousine—built by Ralph Ray Rankin, a 13-year-old pupil of the Benton school. Young Rankin's cars are not wooden models but real cars. They are not more than 2 feet in length but a small lamp under a regulation hood is arranged to generate steam for the miniature engines. From the latch on the padded door to the small perfectly upholstered seat cushions the cars are models of miniature workmanship. The limousine is a marvel of ingenious detail. Ralph Rankin is the son of C. P. Rankin, a real estate dealer of 3024 Olive street.

There are seventeen exhibitors on the main floor, representing twenty-nine different makes of cars, while in the arcade there are twenty-three exhibitors of accessories in which are included three representatives of motor cycles. The show is divided as follows:

Main Floor—Buick Automobile Co., Buick; Central Auto and Livery Co., Thomas; F. Cowherd, Jr., Auto Co., Royal Tourist, Corbin, Stanley, Rausch and Lang electric; Deere Plow Co., Moline; Demster Machinery Co., Locomobile; Ettwein Motor Car Co., Stoddard-Dayton and Welch; Holcker-Elberg C. and R. Co., bodies; Jackson Motor Co., Jackson; Kaw Valley Auto Co., Mitchell and Premier; Maxwell-Briscoe Auto Co., Maxwell; Midland Motor Car Co., Peerless, Pope-Hartford and Pope-Waverley electric; Missouri Valley Auto Co., White steamer and Reo; E. P. Moriarty & Co., Packard, Stevens-Duryea and Woods electric; Palace Auto Co., Pierce, Oldsmobile and Franklin; Rambler Auto Co., Rambler; Richter Brothers, Moon; Studebaker Brothers Mfg. Co., Studebaker.

Arcade—Baltimore Auto and Livery Co., Pullman car; S. F. Bowser Co., tanks; Cowie Electric Co., accessories; Diamond Rubber Co., tires; Ettwein Co., Auburn car; Fisk Rubber Co., tires; Factory Sales Corporation, accessories; Fidelity Oil Co., oils; B. F. Goodrich Co., tires; Jackson Motor

Co., accessories; K. C. Auto Jack Co., jacks; K. C. Auto and Supply Co., accessories; Maxwell-Briscoe Auto Co., commercial cars and accessories; Mercantile Lumber and Supply Co., tires; Morgan & Wright, tires; Moriarty Auto Supply Co., accessories and bodies; Regent Tire Co., tires; Schacht Mfg. Co., motor buggies; Schmeltzer & Sons Arms Co., motor cycles; Sellers-Berry Co., motor cycles; Sprague Umbrella Co., tops and glass fronts; Studebaker Brothers Mfg. Co., commercial vehicles; Wagner Motor Vehicle Co., motor cycles.

PLANS WINTER FUEL TEST

New York, Feb. 5—Special telegram—The Long Island Automobile Club announces a 1-day mid-winter fuel contest of 242 miles on February 25 from Brooklyn to Montauk Point and return. Every car must carry its full quota of passengers, according to catalog specifications. Sealed cans of gasoline and lubricating oil will be placed in charge of observers who will give the same to the respective drivers of the cars to which they are assigned, computing the expense at the following prices: Gasoline per gallon, 25 cents; lubricating oil per gallon, \$1. The winner of the test will be the car which carries its full quota of passengers from Brooklyn to Montauk Point and return at the lowest cost for each person, fuel and oil only to be considered. A comparison with railroad rates will be made. There will be no penalties for repairs, replacements or adjustments to car or tires, for contestants must complete the 242 miles within a time limit to be determined by the committee the night before the test from telegraphic representatives of the road conditions. Each dealer is allowed an entry of not more than three cars of any make. The fees will be first car \$25, second \$15, third \$10, a total of \$50 for the limit of three regular entries, which close February 20.

ANOTHER FRANKLIN STUNT

Washington, D. C., Feb. 1.—A model D Franklin, driven alternately by F. S. Bliven, of the Cook & Stoddard Co., Franklin agent, and J. H. Dailey, one of the holders of the New York-Chicago and San Francisco-New York records, today completed a 96-hour non-motor stop run that was unique in a way. On 4 consecutive days the car was sent over the route of the recent sealed bonnet contest of the Automobile Club of Washington and upon completion of each day's trip that car was run into the garage and the air-cooled engine kept running continuously. The route taken approximates 125 miles, so that the car traveled 500 miles during the road work, while the total mileage on the motor running in the garage and on the road was 1,800 miles. The roads were in extremely bad condition. The only untoward incident of the road work happened Friday at Lima, Md., when a countryman riding a horse came near bringing the non-motor stop run to an untimely end.

EXPORTS SHOW A GAIN

Increase of More Than Million Dollars in Value of Cars Shipped to Other Countries

Washington, D. C., Feb. 2—Figures just compiled by government statisticians show that 1907 was a record-breaking year in the export trade in motor cars. During that period 2,894 cars, valued at \$5,120,963, and parts to the value of \$636,009, were shipped abroad, while during the previous year the combined exports of cars and parts was only \$4,409,186. In December last 173 cars, valued at \$259,341, and parts to the value of \$42,091, were exported, as against 125 cars, valued at \$181,882, and parts valued at \$60,272, exported during the corresponding month of 1906. During the calendar year 1907 cars and parts were shipped to the following countries: United Kingdom, \$1,738,488; France, \$596,450; Germany, \$175,250; Italy, \$255,100; other European countries, \$288,211; British North America, \$1,107,355; Mexico, \$629,807; West Indies and Bermuda, \$293,885; South America, \$244,466; British East Indies, \$35,586; British Australasia, \$213,645; other Asia and Oceania, \$99,009; Africa, \$8,194; all other countries, \$11,466.

The import record does not show up so well. The number of cars imported dropped from 1,295, valued at \$4,416,048, in 1906, to 1,093 cars, valued at \$3,157,168, in 1907. On the other hand the imports of parts rose in value from \$494,160 to \$650,403 during those periods. In December last 106 cars, valued at \$238,385, and parts to the value of \$31,133, were imported, principally through the port of New York, while during the corresponding month of 1906 the number of cars imported was 120, valued at \$418,374, while the value of the parts imported was \$45,622. During the calendar year 1907 cars were received from the following countries: United Kingdom, ninety-one, valued at \$298,629; France, 835 cars, valued at \$2,317,843; Germany, fifty-three cars, valued at \$210,750; Italy, ninety-one cars, valued at \$259,052; all other countries, twenty-three cars, valued at \$70,888.

Advices received this week by the federal government state preliminary steps are being made looking to the combination of several of the larger manufacturers connected with the German motor car industry. This is said to be the result of unfavorable sales, due to foreign competition and difficulties in the matter of capital. The government is also advised from an English source that in that country there has been a change in the methods of purchasers of cars. The idea that one who can afford to do so must have a new car every year is disappearing and purchasers are contenting themselves with cars that have satisfactorily met their requirements. This is regarded as a natural development partly due to the motor car perfection.

British makers appear to be devoting more attention to the manufacture of cars that will come within the means of people of comparatively moderate income. There is some apprehension that the great productive capacity of the industry in the United Kingdom may result in embarrassment for some makers. The British industry had what was deemed a good year, though the unfavorable summer weather affected it somewhat. Reports from France indicate that the productive capacity of the French motor car industry has considerably exceeded the market for French cars.

JAPAN LOOKS UP ROADS

Hartford, Conn., Feb. 1—Connecticut State Highway Commissioner James H. MacDonald had a visitor from Japan the other day who takes interest in good roads. Kahei Toki, secretary of the home department of the government of Japan, called at the state capitol in Hartford with a letter from T. Miyaoka, the charge l'affaires of the Japanese imperial embassy at Washington, introducing him to the governor. The letter stated Mr. Toki is in this country in the interest of "the administration of the public roads." The governor turned the interested subject of the mikado and the letter over to the highway commission, but it so happened Commissioner MacDonald was absent. Chief Clerk E. H. Kelsey, however, did the honors. He gave the gentleman from Japan about as much information concerning roads, their construction, maintenance and the like as he could ask for. Mr. Kelsey showed Mr. Toki some of the fine tarviated drives that surround the capitol. He also showed the mode of procedure in the application of oils, and then revealed the office system that means so much to the success of the commission.

G. N. PIERCE RETIRES

Buffalo, N. Y., Feb. 3—A reorganization of the George N. Pierce Co., maker of the Great Arrow motor cars, has been effected recently, present officers and directors of the company being as follows: President, George K. Birge; vice president, Henry May; treasurer, Charles Clifton; secretary, L. H. Gardner; directors, George K. Birge, Henry May, Charles Clifton, W. H. Gardner and William B. Hoyt. This organization is the same that has been in control of this company for the past 10 years, with the exception that Mr. Pierce has retired and Mr. Hoyt, who has been the attorney during all that period, takes his place on the board of directors. Mr. Pierce leaves with the kindest feeling of all concerned, and with the most cordial feeling on his own part, having disposed of all his interests in the company to his associates. This was brought about by his desire to retire from active business and also to the fact of his being obliged to go south for the entire winter on account of the health of Mrs. Pierce.

BOOST FOR GOOD ROADS

Congressman Currier is Seeking a Commission and an Appropriation of \$50,000,000

Washington, D. C., Feb. 1—A splendid good roads proposition has been evolved by Representative Currier, of New Hampshire, and it deserves the hearty support of every motorist. The proposition is contained in a bill introduced in congress this week providing for the creation of a national highway commission, and for the construction, improvement and maintenance of public highways. The proposed commission is to consist of three commissioners to be appointed by the president of the United States. They shall have a practical knowledge of road building and construction.

It will be the duty of this commission to take into consideration, formulate and adopt such plan or plans for the improvement, construction and maintenance of such public highways as shall, in the commission's judgment, acting in coöperation as far as possible with the duly constituted authorities having charge of the public highways of the several states, promote and facilitate interstate commerce and trade and the postal service.

It will be the further duty of this commission to superintend and direct such works as are contemplated and to carry into full execution such plans as may be evolved. The commission will make additional surveys and investigations and mature plans to construct, improve and maintain a system of public highways advantageous to trade, commerce and the postal service.

Authority is given the commission to institute proceedings for the acquirement by condemnation of any land, right of way or material needed to enable it to prosecute its work. The bill carries with it an appropriation of \$50,000,000. Not less than \$500,000 out of this appropriation is to be expended in each state at the rate of \$100,000 a year. The appropriation is to be available at the rate of \$10,000,000 a year during the years 1908 to 1912, inclusive. Various other provisions are contained in the bill, one of them being the detail of officers of the corps of engineers of the army to assist the commission. The bill was referred to the committee on agriculture and is sure to be heard from before the present session ends, it is believed.

This bill is only in harmony with the interest the government is showing in good roads and at the same time it is keeping step with the progress being made by the states individually. The lawmakers are having it forced on them in the most impressive manner that the prosperity of the country, to a certain extent, depends upon its highways, and so loud is the voice of the good roads army that the legislatures are sit-

ting up and taking notice. It only needs some such action as that proposed by Representative Currier to start a wave of road reform throughout the country, and the motorists can help the movement by giving bills like Currier's all the assistance they possibly can.

With the government aiding the good roads' movement, all that is needed to make the motorists' cup of happiness overflow is to have congress pass Terry's uniform motor vehicle law, which Representative Cocks is trying to get the national legislature to adopt.

PROVIDENCE HAS BIG SHOW

Providence, R. I., Feb. 1—Bigger and better than anything that has ever preceded it in the way of a show here is the motor car exhibition which opened its doors this evening. It is much different from the usual run of such exhibitions, for it is not only a motor show but also a military carnival. Tonight the hall was packed and with Lieutenant Governor Ralph C. Watrous representing the state, accompanied by many members of the legislature and officers from all the military commands on hand to review the maneuvers, four infantry companies and one of the naval brigade companies went through a drill that was perfection. The Boston motor trade is well represented. There are 120 motor cars in the show, and they are well arranged. There also is a number of motor boats and many accessories. The decorative effects are pretty, representing a partly tropical, partly Oriental garden. Throughout the week the military companies will present a series of evolutions which are destined to make the show memorable. This will be but one of the many events. There will be special drills, for which the members of the various commands have been practicing for weeks, as some splendid prizes are offered for the successful companies. The cars exhibited at the show comprise the following: Reo, Berliet, Premier, American, Overland, Franklin, Rambler, White, Stanley, Grout, Corbin, Royal Tourist, Maxwell, Glide, Kiblinger, Northern, Marmon, Atlas, Mitchell, Thomas, Ford, Cadillac, Logan, Peerless, Jackson, Winton, Elmore, Welch, Stoddard-Dayton, Packard, Studebaker, Pierce, Buick, Knox, Locomobile, Stevens-Duryea, Oldsmobile and Ford.

FLORIDA DATES SET

New York, Feb. 2—A revision of the schedule of motor car and boat races planned to take place in Florida during March has been made and is declared by Senator Morgan to be final. The Ormond meet, March 2 to 9, will set the ball a-rolling. On the following Monday the big run from Jacksonville to Miami will start and pick up pleasure tourists at Ormond and Daytona, reaching Miami Saturday. The Palm Beach regatta is scheduled for Tuesday, Wednesday and Thursday of the following week.



THE READERS' CLEARING HOUSE



QUESTION OF VOLTAGE

Evanston, Ill.—Editor Motor Age—Please inform me through the Readers' Clearing House the voltage of a 6-volt battery current after it has passed through a high-tension coil. Also, what is the amperage? What is the voltage of a low-tension magneto, also amperage, and the same in regard to high-tension magneto, with magneto running at moderate speed, say when the car is going 20 miles per hour?—T. B. Davis.

If the coil is the only resistance in circuit with the battery, it will absorb the entire drop in voltage. In other words, the voltage drops 6 volts, approximately, between the positive and negative binding posts of the battery, and the amount of that drop in any particular portion of the circuit will bear such proportion of 6 volts as the resistance of that part of the circuit bears to the total resistance. In other words, the drop in any part of the circuit is purely a matter of proportion. The amperage required of a good high-tension coil to produce a good series of sparks should be from $\frac{1}{2}$ to 1 ampere, with the engine standing still and trembler buzzing continuously. If the trembler is held so that the current flows steadily, the amperage will be several times the above amount, possibly 4 or 5 amperes. It may reach 100 volts or even more at ordinary car speeds. The voltage of the secondary circuit of a high-tension magneto probably reaches 20,000 volts when sparking through the plugs in the ordinary way. When sparked in the open air, with the spark gap increased as much as the magneto will stand, the voltage may easily run up to 5,000 or possibly more.

LENGTHENING A FRAME

Pittsburg, Pa.—Editor Motor Age—I have an old-style Peerless with very short wheelbase which I would like to lengthen. It has channel iron frame and I thought I could cut the same and rivet in a larger size, thereby getting extra length without disturbing the engine, transmission, etc. Please let me know if this will be practicable, and, if so, how much must the ends overlap to make a strong job. Will it be advisable to use bolts and nuts in place of rivets?—F. H.

It will be entirely practicable to increase the length of the wheelbase by piercing out the rear end of the frame. It may possibly be found on cutting the rivets at the corners that they have worked loose and enlarged the holes in the frame. If so, the holes in the frame should be reamed out for the next larger size of rivets. The splicing strip should be at least 10 inches long, giving 5 inches overlap each side of the joint, and the old rivet holes should be used as far as possi-

ble instead of making new ones. It will be safest to use a piece of angle iron, set inside the frame, with the flange underneath. Of course the inside lower edge of the channel will have to be rounded to fit the fillet of the angle iron. The rivets in the flange should be $\frac{1}{4}$ -inch diameter, and about four should be used in a row in each end, so as not to weaken the crosswise section of the flange more than can be helped. The rivets in the web may be 5-16-inch diameter, and the same number should be used. A 12-inch strip should also be riveted under the top flange. This arrangement will bring the forward hanger of the rear spring forward of the splice.

CONNECTING ROD ANGLE

Freehold, N. J.—Editor Motor Age—Please inform me as to the greatest angle imposed on the connecting rod of any successful gasoline motor. Also, if the offsetting of cylinders has any apparent drawback or if in theory it is correct.—W. H. Porteus.

The lowest ratio of connecting rod length to stroke in practical use is about one and three-quarters; that is to say, the connecting rod, measured from center to center of its bearings, is one and three-quarters times its stroke. This corresponds to a maximum crank angle of 16 degrees from the piston axis when the piston crankshaft axes intersect. The common practice is to make the connecting rod two or two and one-fifth times the stroke. It is quite frequent for the cylinder axes to be offset from the crankshaft axis from an eighth to a fifth of stroke, in order to reduce the angularity of the connecting rod on the explosion stroke. A slight increase of power—not over 4 or 5 per cent—is claimed for this construction on account of the reduction of internal friction. It is also claimed by some makers that knocking due to early ignition is thereby softened, though this is denied by others. It is evident that the connecting rod angularity is increased on the compression stroke by offsetting, and this must be balanced against the gain. There is, however, no other drawback, although the draftsman's problem of laying out the cams for correct timing of the valves is complicated.

FAULTS OF AUTHORS

Los Angeles, Cal.—Editor Motor Age—I have often wondered why it is so few writers of short stories in magazines take the trouble to post themselves on motor matters when they choose to introduce cars into their stories. At the present time, when motor cars are so universally used, a very large percentage of the people are beginning to understand a great deal about them and such names as clutch, throttle or carbureter are no longer Greek

verbs. Many writers seem to think it sufficient to simply say the machine broke down, and it is also noticeable that most writers are agreed on one point—that whenever they wish anyone to be indefinitely delayed in their stories they invariably send them out in a motor car and it always explodes or some other impossible thing happens. But when a writer tells about some such breakdown and insists on going into details, then he at least might take the trouble to see if his details are correct and find out if what he has written has any sense in it. A noteworthy example of this is to be found in the current number of Ainslee's in the otherwise splendid story "The Comedienne." In this story a car is used to good advantage, with the inevitable breakdown. The machine is said to have "lost headway," so the man who was driving brought it to a stop and got out and investigated. He raised the hood and bent over the "dingy coils within"; the woman in the car is said to have been curious, so she, while stepping out of the car, caught her dress and tore it badly on the gear clutch. After the machine had been fixed the woman in question is said to have climbed back into the car, "carefully avoiding the clutches." Now, very few cars I have come across had more than one clutch, and that one is usually put very much out of the way or in a case and below the footboard. The author, of course, meant the change speed lever, but even at that the woman would quite naturally have gotten in on the other side and not climbed over or under the steering wheel.—F. H. Michaels.

FRICTION TRANSMISSION

Crawfordsville, Ia.—Editor Motor Age—I would like to know which type of transmission in the two motor buggies of the Neustadt people of St. Louis, described in Motor Age of January 16, will transmit the more power to the road wheels, everything else being equal. It appears to me the friction transmission will be the more desirable if it will transmit as much power as the planetary transmission.—C. M. Strain.

The very fact that some makers pin faith to friction and others to some other form of transmission indicates there is a difference of opinion about the relative merits of the two transmissions. Friction transmission has much to commend it—and it has its objectionable side. The same may be said of any other form of transmitting power. It must be remembered that in using the planetary gear most of the driving is on the high gear and is therefore direct, with no loss of power other than a little occasioned by the extra weight of the drums, but that on low

gear and reverse there is considerable loss. This is not material, however, inasmuch as there is ample surplus when these gears are being used. There is some loss in friction transmissions, but, on the other hand, it is so simple as to commend it. The disks will have to be renewed occasionally, however, but otherwise it should require no particular attention. The Neustadt friction transmission will doubtless give more clearance than the planetary, and this may be an important factor.

AIR VELOCITY AND OILING

Bradenville, Pa.—Editor Motor Age—Please tell me through the Readers' Clearing House columns the velocity of gas or air under the different pressure of 5, 10, 15, etc., up to 50 pounds, in feet per minute. Which uses more lubricating oil, a water-cooled or air-cooled cylinder? How much lubricating oil should an engine use for each gallon of gasoline burned? Can you say what is the pressure in a 4 by 4-inch cylinder of a four-cycle engine at the end of the power stroke?—J. M.

The first question does not indicate whether reference is made to the escape of air under pressure from an orifice or to the flow of air in a pipe. The length and shape of the pipe and the smoothness of its interior surface will also affect the result. If J. M. will state the conditions, approximately, Motor Age may be able to help him. An air-cooled engine uses more lubricating oil, ordinarily, than a water-cooled engine. For each gallon of gasoline an engine should use from 1-20 to 1-30 of a gallon of oil, and under favorable conditions even less. The terminal pressure in such an engine as is mentioned will be from 25 to 35 pounds per square inch, depending on the speed and the size and diameter of the valves.

TWO-CYCLE VS. FOUR-CYCLE

Ridgefield, Conn.—Editor Motor Age—Please give me light on the following: I have been looking up the relative merits of several makes of cars. Among them I have run against the two-cycle motor. Having run two and four-cycle stationary engines, I have been led to believe the four-cycle is the more economical in fuel consumption, while the two-cycle is easier to care for owing to less complication in mechanism. I find from experience of users that from 12 to 16 miles are obtained per gallon of gasoline, which is about the same as with the average four-cycle motor. If the two-cycle motor is fully as efficient and economical as the four-cycle—and it certainly is decidedly less complicated—why do a large majority of the car and stationary engine makers still make and talk the four-cycle motor? A word as to your paper from a new subscriber. I believe no one in any way connected with or a user of a gasoline engine can afford to do without it at many times its cost.—A. C. I.

The testimony of actual users of two and four-cycle engines as to the fuel consumption of those types is worth more

than any theoretical arguments that can be adduced. As the inquirer states that he has had experience with both, it is reasonable to suppose the experience is as good as that of anyone else. In making comparisons between different motor cars it must be borne in mind that the speed and weight of the car are vital factors to be considered, as well as the fuel consumption per mile. It is possible to show a consumption per mile almost indefinitely small by using a light car and driving it as slowly as it will go in high gear with the throttle nearly closed. Assuming it to be possible to use high gear all the way, it is evident the engine must make a certain number of revolutions in any event to cover that distance, and the smaller the consumption per revolution—that is the more nearly the throttle is closed—the lower will be the consumption for that distance. Consequently, it is only fair to compare cars of the same weight at equal speeds. Under these conditions A. C. I.'s own experience is substantially duplicated by that of other users. Whether on this account a four-cycle motor is to be preferred is of course an entirely different question, which each user must settle for himself, with reference to his mechanical ability and the car performance he desires.

ILLINOIS REGISTRATIONS

Chicago, Ill.—Editor Motor Age—A prominent motor car accessory dealer stated to me the other day that under the Illinois motor vehicle law the license must be renewed by May 1 of each year, to which I took exception. I have looked up the law in the matter but can find nothing to enlighten me on the subject. Please give me your view on the matter.—A. J. Oliver.

There is nothing in the new Illinois law which can be construed as meaning that a license, or perhaps more properly speaking a registration, must be renewed at any time. The law is very plain and provides for only one registration except where a car is sold, when notice of the sale must be made to the secretary of state and if a new car is procured a fee of 50 cents is required.

OFFSETTING CONNECTING RODS

Fairbury, Ill.—Editor Motor Age—I will be pleased to see in as early an issue of Motor Age as convenient your opinion on the practice of offsetting the crank end bearing from the center of the shank of the connecting rod. Will uneven wear be occasioned thereby?—Subscriber.

Offsetting the ends of the connecting rod is a very common practice, and is prompted by the desire to economize fore and aft length in the engine, since it frequently happens that the most economical design of crankshaft does not bring the crankpin

centers in line with the cylinder centers. It does occasion uneven wear, and if the connecting rod is of especially light section it may cause the rod itself to spring slightly. In any event, the ends of the upper and lower bushings wear, owing to the tendency of the pressures to force the rods into a slanting position, and the bushings themselves wear slightly bell-mouthed. Although these various sorts of wear may amount to no more than a few thousandths of an inch, they are sufficient to produce knocking much sooner than it would occur with the centers of the rod ends in line.

HARD TO ANSWER

Elmwood, Ill.—Editor Motor Age—Please let me know through the columns of the Readers' Clearing House if a 2½-horsepower two-cycle single-cylinder motor in perfect order will be powerful enough to run a car weighing from 250 to 350 pounds; if so, please state what speed it will give and the number of passengers it will carry. If this engine will not do, please advise what power will be necessary and where I can get such an engine.—J. F. B.

Presumably J. F. B. refers to a small marine motor. Possibly this size motor will carry a very light rig, but it will not prove much of a success. In the first place a 250-pound car will not be strong enough to carry much of a load and the engine will be able to pull it only on the very best of roads. Motor Age will have to know more about both motor and car to say what the speed and carrying capacity might be. Offhand, however, it suggests failure in the first degree. Consult the advertising columns of Motor Age for engine makers.

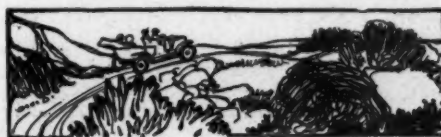
THAT MUDDLED EXPERT

Pocahontas, Ia.—Editor Motor Age—Regarding the matter under the heading "A Muddled Expert," in the last issue of Motor Age, it might be interesting for him to state what kind of centrifugal force is demonstrated in rounding short curves with a bicycle or sleigh when it upsets. Procure his theory of the gyrocar and give us something rich and racy. That he may rest his mind from his scientific pursuits, I suggest he make application to someone who has a cuckoo clock for a setting of eggs and in that way change his occupation, as he gives evidence of working overtime in scientific matters.—E. R. Y.

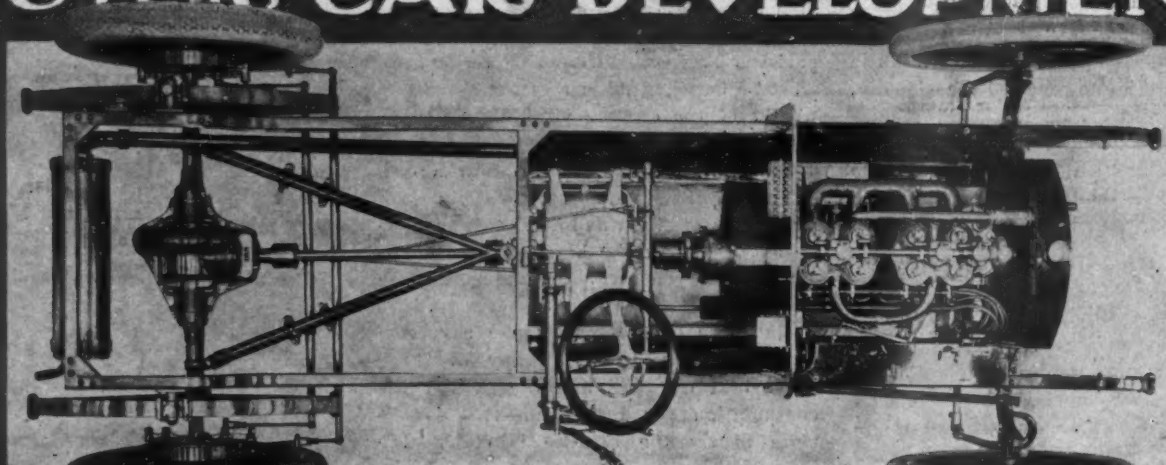
A. L. A. M. HANDBOOK

Detroit, Mich.—Editor Motor Age—Please inform me, through the Readers' Clearing House the address of the publisher and the price of the 1908 A. L. A. M. handbook. Is it possible for me to procure one in Detroit?—M. I.

The handbook is published by the A. L. A. M. Write M. L. Downs, the secretary, at 7 East Forty-second street, New York, requesting a copy and it is more than likely it will be forthcoming.



MOTOR CAR DEVELOPMENT



The Moon

PLAN ILLUSTRATION OF 1908, 30-35-HORSEPOWER MOON CHASSIS USED IN ALL MODELS

IN PERFECTING its cars for the third year the Moon Motor Car Co., St. Louis, Mo., has seen fit not to alter to any extent the general design adopted a year ago, when its engineer, L. P. Mooers, brought out his first Moon model, and which proved to be the first car of this name exclusively manufactured by the company. At that time the characteristic features were: Four-cylinder motor with valves in the head requiring but one rocker arm for opening the intake and exhaust valve of each cylinder; multiple disk clutch, selective transmission and shaft drive with centrally arched rear axle, giving a dish to the rear wheels the same as that used in the front wheels; frame arched over the rear axle, full elliptic rear springs and internal and external rear wheel brakes. This general car skeleton has been continued unchanged, but, by way of alteration, a dual ignition system is fitted, consisting of an imported Simms-Bosch magneto, with storage valve supplementary. This change, coupled with some few minor alterations, is the sum total of 1908 improvements.

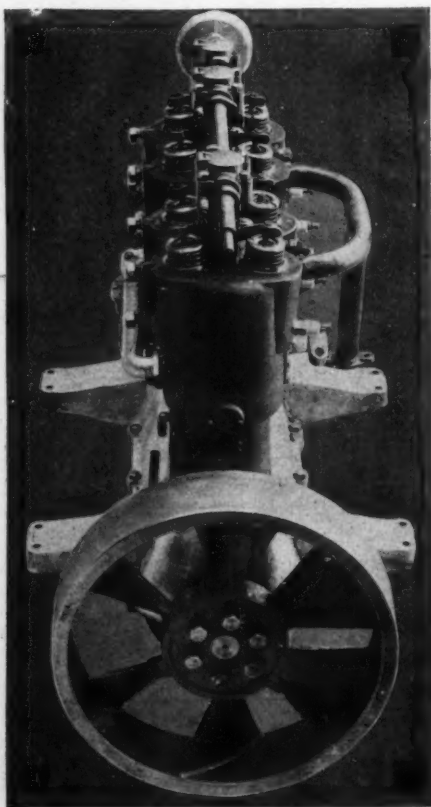
Three models are presented for this year—model C, five-passenger touring car, with 110-inch wheelbase, and tires 34 by 3½ and 4½ inches on front and rear; a roadster using the same chassis; model D, a seven-passenger touring car with 121-inch wheelbase, and 36 by 3½ and 4½-inch tires in front and rear, respectively. The same motor is used in all. It has a conservative rating of 30-35-horsepower, with cylinders having a bore and stroke of 4½ inches. This motor, of which three illustrations appear, is one more disciple of that slowly-increasing class using the overhead camshaft as well as one rocker arm for each cylinder valves. The twin cylinder castings have a very uniform contour except for a slight expansion on each side, needed in waterjacketing the valve cages, yet in spite of these expansions the top of

the cylinder casting is not abnormally wide. Care has been taken to have ample waterjacketing space around the valves, which, by the way, are contained in cages that sit deep into the cylinder head, and at their lower ends are a ground taper fit upon the shoulder of the cylinder casting. Intake and exhausts, made interchangeable, are nickel steel forgings, with the stem and head integral and having the stem of varied diameter, one portion being of larger diameter than the other. The upper part of the stem is slotted to take a key for holding the washer against which the top of the spring rests in place.

For the opening of these valves, the overhead camshaft is required, it being driven from the crankshaft through a vertical shaft in front of the forward cylinder pair, bevel gears being the transmitters from the crankshaft to this vertical as well as from the vertical shaft to the camshaft. Aluminum housings for enclosing these gears are in place, and on the top of the forward cylinder casting is a bracket for supporting the top end of the vertical shaft and providing a bearing as well as carrying the front end of the camshaft.

In addition the camshaft is carried on a pair of bearings supported on the centers of the cylinder castings, which bearings have large oil-retaining cups. At either side of these bearings is a compound cam, which serves to open the intake and exhaust valves for a cylinder. This cam does not act directly on the rocker arm, but against a roller carried on a spur from this arm, the roller being constantly pressed against the cam by a spiral spring surrounding the axis of the rocker arm. This spring has to be of sufficient strength to overcome the action of the intake valve spring and open the intake valve, which takes place only when the roller drops into a cavity on the cam. The major part of the cam, or that portion which is always in place on a cam, presses outward on the roller and the motion opens the exhaust valve. On the ends of the rocker arm are split yokes, which pinch between their ends tapered screws that bear upon the tops of the valve stems, and by the regulation of which the adjustment of the valves is obtained. A set screw connecting the arms of the yoke serves to pinch it together and hold the adjustment.

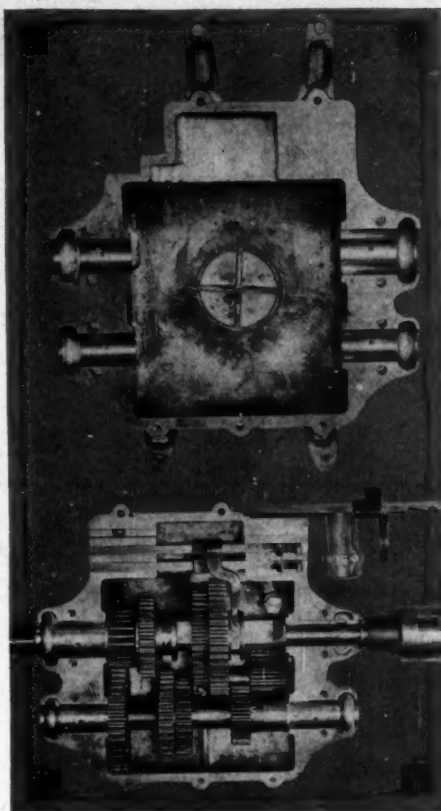
But while the valve action may be one of the unique features of the Moon motor, its general arrangement and economy of parts merit attention. At the left front is the centrifugal water pump, which is spur-driven from the vertical shaft, the



THE 1908 MOON MOTOR

gears driving it being enclosed with an aluminum housing. Directly opposite is the Simms-Bosch magneto, placed with its axis transverse of the car and nestled compactly between the radiator and the cylinder casting. Its wires are carried in a tube suspended from the cylinder castings and having knife-blade connections with the spark plugs. The single-unit coil used in conjunction with it is located on the dash, and the piping for the jump spark battery system is housed in a second fiber tube, which is carried close to that for the magneto wires. The magneto is so mounted that the end to which the wires are attached is outward, making it possible to do any work with these wires without trouble. A commendable part of the whole ignition scheme is that the spark plugs and all the wiring are on the intake side and entirely away from the heat of the exhaust piping. The single spark plug for both sets of ignition is carried horizontally in the cylinder sides, so that the spark takes place immediately beneath the intake valve.

Motor lubrication is incorporated in an eight-feed mechanical oiler carried beneath the bonnet at the left of the rear cylinder pair. It is belt-driven from the rear end of the camshaft and feeds through eight side feeds on the left of the dash. The leads in this system pass to the important motor bearings and cylinders. Closely associated with these parts of the motor is the compact piping system. The intake, in the form of a Y, has one branch to each cylinder pair, and the exhaust a one-piece manifold comprising a horizontal piping with an integral branch to each cylinder. Both the intake and exit water pipes are on the left, the intake being a T piping with the vertical part placed at an acute angle to the front, so as to form a straight line of union with the pump. The exit is a tapered pipe having its diameter increased where it is joined by a branch from the front cylinder pair. Instead of emerging from the center of the cylinder heads, it departs from the space between the expansions for containing the exhaust valves. Cooling is confined to the water-



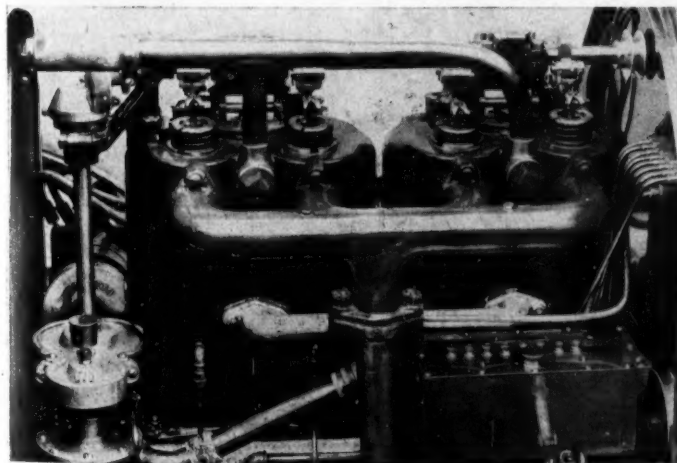
MOON GEARBOX AND COVER

pump already mentioned and honeycomb radiator, the fan not being used.

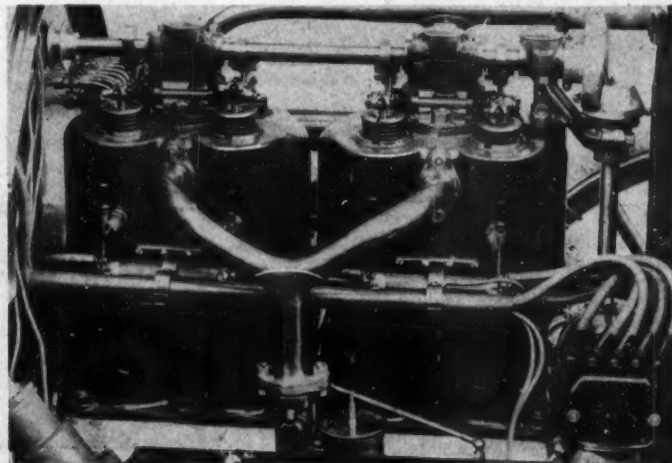
In the transmission system, first of all comes the multiple disk clutch, with its fifty-three steel rings or disks arranged in two sets—twenty-six in one and twenty-seven in the other. Both sets are 1-32-inch thick, operating in a tubular extension of the flywheel hub, within which an oil bath is retained. These disks are anchored respectively to the flywheel and the shaft connecting with the transmission, one set connecting by their notched peripheries, the others by their notched hubs. The clutch is interconnected with the internal brakes used for emergencies, so it is first disengaged, after which the brakes are applied. Between the clutch and the gearbox is a universal joint.

The transmission, of the selective type, gives four forward speeds with one reverse, all obtained by one lever operating in a three-slot quadrant. The gearbox is a two-piece aluminum casting with the upper half, the supporting one, carried through a pair of right and left arms resting on the subframe pieces, whereas the lower half is carried from the upper, this construction permitting of dismantling the gearset without taking the body off the car. The main and counter shafts are side by side, the latter to the left. Both revolve in Parsons white brass bearings. The case is decidedly compact, and all of the shifting mechanism is enclosed. A glance at the chassis illustration on the top of the preceding page shows that the sleeve to which the change speed lever is attached is in line with the rear end of the gearbox, and that the shifting rods are carried in the right half of the case—an arrangement which reduces complexity and leaves the clutch free of any entanglements which would be the case if the shifting mechanisms were at the forward end of the gearbox.

The driveshaft connecting with the rear axle carries two universal joints and is supported in its work by a V-shaped combined torsion and radius system, in which the apex of the V connects by ball and socket joint with a bracket on the rear face of a crosspiece of the frame. The opposite ends unite by hinged joints with vertical bolts to the housings of the rear axle, the union of these being inside of the frame line. This torsion system, owing to the use of vertical bolts in the hinges of the rear axle housing, prevents any axle displacement, and also allows of the use of full elliptic springs in the rear which have a trunnion support for the frame and rest on revolvable seatings on the axle. Closely associated with this rear system is the raising of the frame $3\frac{1}{2}$ inches over the axle, which gives a range of spring action of approximately 6 inches. Before dispensing with the rear axle, it might be noted that the differential housing is a steel casting into which is brazed the steel sleeves forming the axle tubings.

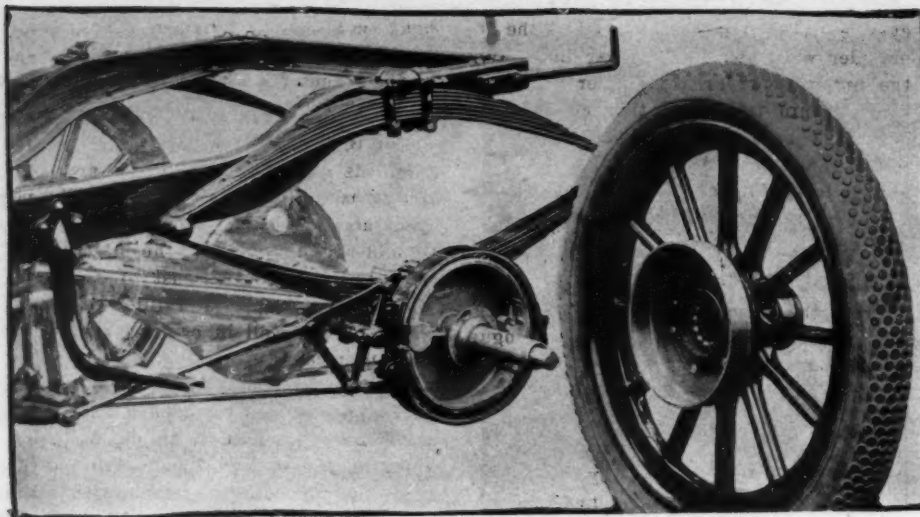


WATER PUMP AND MULTIPLE OILER ON LEFT SIDE



MOON MOTOR

CARBURETOR AND IGNITER ARE ON RIGHT SIDE



MOON'S REAR AXLE CONSTRUCTION AND ENVIRONMENTS

These sleeves extend through the hubs of the wheels, giving a complete floating construction. It is also of interest to note that the differential gears are carried on four-point ball bearings, whereas the front and rear wheels are supported on three-point bearings. Also closely associated with the rear axle is the use of double rear wheel brakes, internal and external sets using camel's-hair lining. Application of each set is through equalizers. Features of the running gear, in addition to those already mentioned, are a subframe construction for carrying the motor and gearbox, combined with the use of steel plates between the main and subframe parts, which limits the use of the mud apron to the space between the subframe members, and in which position it is anchored by hand screws, these being used to facilitate its removal. The forward axle is an I-beam, weldless construction, with jaw endings for taking the steering knuckle parts, and the tie rod is in rear of the axle. The drag link which connects the right steering knuckle with the steering gear radius arm, connects with the knuckle above the axle. In the steering gear are right and left screws on the steering shaft, which act with integral nuts and pushers to the double-end bell-crank of the steering arm. On the steering wheel are throttle and spark controllers.

NEW IDEAS IN THE GAETH

The Gaeth Automobile Co., a company incorporated to succeed to the business of Paul Gaeth, one of the pioneer manufacturers of Cleveland, has as its leading model for 1908 a seven-seated touring car. The new car follows in general lines and makeup the model of last year. It shows a number of improvements and refinements. As heretofore, the cylinders are cast in pairs with the valves placed on opposite sides and the cylinder walls, heads and valve chambers cast integral. Although rated at 35 horsepower the cylinder dimensions have been increased, and are now $4\frac{1}{4}$ inches by $5\frac{1}{4}$ inches. The upper portion of the

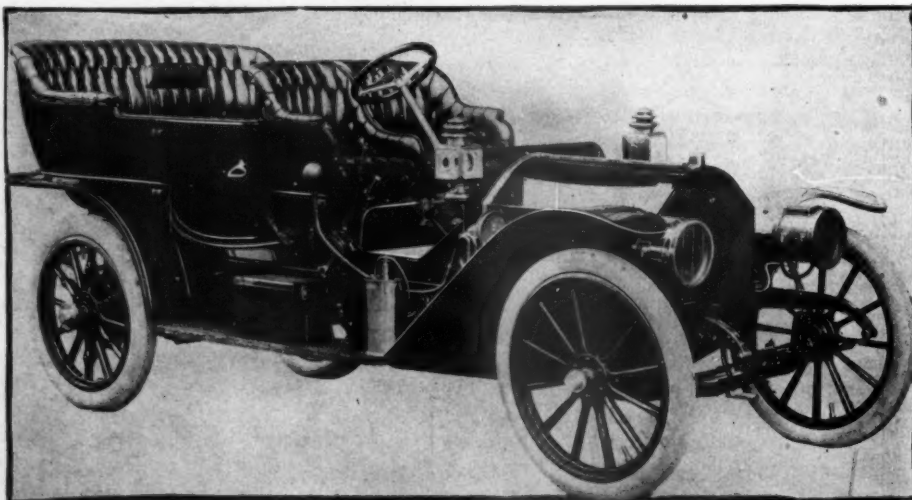
crankcase is continued to the sides until it meets the frame, thus forming an integral dust apron. The motor has a three-point suspension, the central one at the forward end being supported on a cross-piece of the frame, and two supports at the rear at which points lateral extensions of the crankcase repose on the frame pieces. In grinding cylinders and piston rings the piston rings are secured in the piston grooves by an adhesive and are ground in place, the rings not having to be sprung in placing them in the grooves. The thermo-siphon system of cooling is continued, but the Pedders type of radiator used. The system has a capacity of 10 gallons and includes an auxiliary tank at the rear of the top of the radiator. This tank is grooved and the fan passes through it, assisting in radiation. Water flows from the base of the radiator through a $1\frac{1}{2}$ -inch hose to the lower front of the jacket through the first pair of cylinders, communication between the two pairs of cylinders being through a short 1-inch pipe connecting the adjoining faces of the castings. The return flow is by pipe from the top of the jackets to the top of the radiator, the pipe of variable diameter, tapering from $1\frac{1}{2}$ inches over the rear

pair of cylinders and increasing to 2 inches where it is joined by the branch from the forward cylinders.

The ignition system is a low-tension make-and-break form with a low-tension magneto carried on the bed of the motor. This is driven by gear, the gear being enclosed with those on the half-time shaft. The make-and-break devices are carried in openings above the intake valves. Operating devices are actuated by a vertical shaft riding at the right side opposite the space between the front and rear pairs of cylinders, and driven by a gear from the intake camshaft. At the top of this shaft is a set of eccentrics which operates horizontal push rods which strike upon triggers on the upper end of the moving electrodes. The spark is varied from the steering wheel.

The Gaeth carburetor is controlled in three ways; by the air entering, the gasoline entering and the mixture passing to the motor, which are all controlled from the lever at the top of the steering wheel. The carburetor is of the separate float chamber type and the mixing chamber is a vertical cylinder through the center, which is completely filled by a needle valve, which turns in throttling. All the air comes up from below and passes around the needle. At the base of the needle are V-shaped openings, which regulate the amount of air admitted. In the side of the needle is a circular opening for controlling the outgoing mixture, a part turn of the needle also effecting a part movement of the needle valve in the nozzle, so with more air there is an increased flow of gasoline. It is possible to set the carburetor for slow running and pass up to high speed without any regulation of the valves.

The clutch consists of a leather-lined band clamping around the drum of a fly-wheel 13 inches in diameter and $1\frac{1}{2}$ inches in width. A pair of arms, crossed like a pair of scissors, extends through the center and a cone-shaped dog on a horizontal shaft in pressing between them contracts the band. The clutching effect is gradual. The transmission, of the sliding



SEVEN-PASSENGER MOON CAR, WITH EXTRA TONNEAU SEATS

gear type, with three forward speeds obtained on the progressive principle by a backward movement of the speed-change lever, giving all the ranges from direct to reverse, has both shafts carried on plain bearings. The case and bearings are split horizontally and the bearings, which are of special babbitt metal and are made in shell form, can be taken out or adjusted without difficulty. The bearings are lubricated by chain oilers. The case is suspended on two dropped longitudinal braces which in turn are carried on two channel cross pieces on the car frame.

The rear axle is of the floating type fitted with ball bearings. The braking system includes two separate sets of drums with an air gap of 1 inch between, allowing for radiation in severe braking. One set clamps upon a drum and the other expands within one. The brakes for ordinary use are lined with leather, but the emergency brakes have bronze shoes. The framework is of standard pressed steel construction and the side bars are parallel throughout their length. They are $4\frac{1}{2}$ inches deep at the center and taper to 2 inches at either end. There are four semi-elliptic springs, those in the front 44 inches long and those in the rear 50 inches. These springs are guaranteed by the maker for 1 year. The front axle, an I-beam forging with a drop in the center, is provided with jaws for the Elliott type steering knuckle. The car has a wheel base of 112 inches, 56-inch tread, 34-inch wheels with 4-inch tires front and rear, and weighs 2,700 pounds.

STOPS PRE-IGNITION

One of the novelties of the Autocoil Co., Ardmore, Pa., is termed the Buck-proof unit, which new coil is claimed to stop pre-ignition. The units are made so there is practically no inductive influence on the coil adjacent to the energized cell, which is claimed to eliminate that trouble of the bucking motor when under compression and the car is doing direct drive work on a small grade. All of the Buck-proof units have a safety gap which serves to save the secondary winding of the coil from injury in the event of the high-tension wires becoming disconnected from the spark plugs.

HYDRO-PNEUMATIC SPRINGS

The Trojan Hydro-Pneumatic Wheel Co., Watervliet, N. Y., has its hydro-pneumatic springs on the market. When used on a car these springs are needed in sets of four, one between the end of each axle and the car frame. At first glance it appears as if the car body at each corner was supported on the axle by a short vertical tubing of good diameter. A vertical cylinder sits on the top of the axle and is attached thereto by a ball joint to give a fair amount of universal action. A second cylinder, or piston as it is called, is attached upside down, with its closed end secured by a ball joint to a bracket on the car frame. Its open end is a sliding fit within the big cylinder. The lower

cylinder is filled with a liquid and the remainder with air. As the car body sags the upper or inverted cylinder is forced down within the other, thus compressing the air as well as the liquid. This gives the spring effect. A universal valve is attached to the big cylinder so that any desired air pressure can be used within the cylinders.

MOTOR CAR LITERATURE

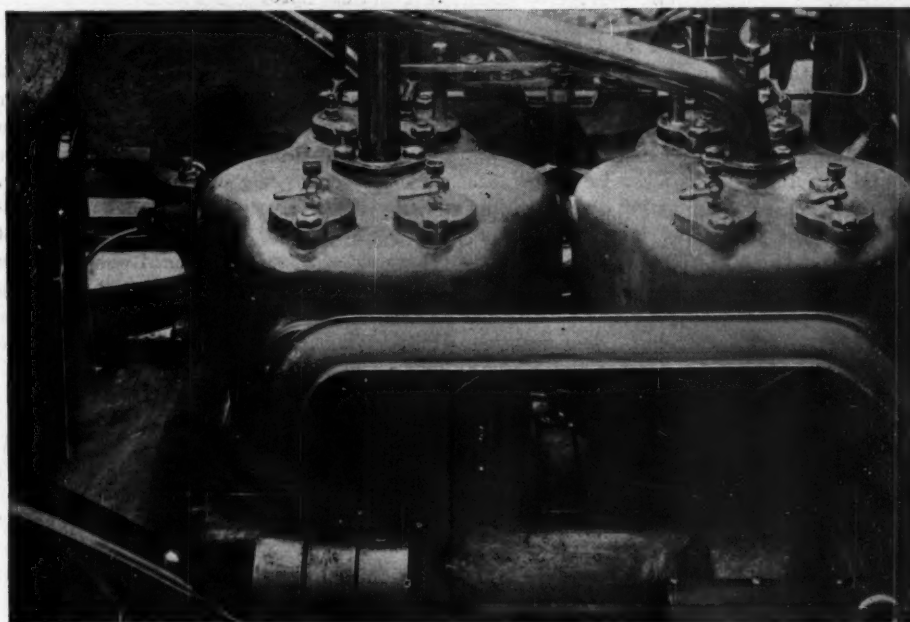
From the Milwaukee Locomotive Mfg. Co., Milwaukee, Wis., comes a catalogue illustrating the Vanguard gasoline and alcohol shunting and locomotive engines as well as views of the motor and the engines pulling trains of cars.

L. M. Dieterich, Kansas City, Mo., has a novel booklet descriptive of his universal drive axle. Instead of telling a matter of fact story of his axle, the booklet has each page divided vertically into halves with the parts of a standard car enumerated on

pany, contains an interesting page story of the performance of the Studebaker car in the recent 600-mile run of the Chicago Motor Club.

The B. F. Goodrich Co. goes a step further this year than last in its art poster that it is mailing to its friends. The poster contains a colored reproduction, 19 by 25 inches, which is from the brush of Carl Blenner, showing the bust of a brunette with green draperies falling over the shoulders, all well in contrast to the reddish background.

The 1908 Lozier catalogue uses an attractively embossed front cover with "Lozier" across the top, beneath which is a laurel wreath within which appears a road driver seated at the wheel of the car. The reading matter is profuse, so are the illustrations, each of the car models being the subject of a full-page illustration, the car standing lengthwise



MOTOR USED ON THE 1900 GARTH CAR

the left half of the page and those needed in the Dieterich axle on the right side. The comparison by means of this printed matter is very apparent.

In the 1908 Glide catalogue, a comprehensive car description is given, illustrated with half-tone and line reproductions of completed cars and all car models.

No more artistic and elaborate catalogue for 1908 has appeared than that of the De Luxe Motor Car Co. Besides showing the De Luxe car, it contains, by way of interest, a historical pictorial review of the various pioneer cars built in the early decades of the nineteenth century, with a paragraph of explanation on each. This historical feature occupies separate pages as well as the lower half of many of the regular catalogue pages. The part relating to the De Luxe car is profusely illustrated, but little descriptive matter is used.

The January issue of the Studebaker, the house organ of the Studebaker com-

pany, contains an interesting page story of the performance of the Studebaker car in the recent 600-mile run of the Chicago Motor Club.

In the latest Reo booklet a woodland effect with a passing Reo car is used for the cover decoration. In the book proper each page is surrounded by a triple brown border. The illustrations and descriptive parts are conventional.

"Missouri Proof" is the suitable title given to a booklet filled with reproductions of letters received by the Supplementary Spiral Spring Co., of St. Louis, Mo., which letters are commendatory of its spiral springs. In all nineteen letters are reproduced in the book.

The 1908 Monarch catalogue of the Monarch touring cars built by the Monarch Motor Car Co., Chicago Heights, Ill., makes a specialty of illustrating the unit motor and gearbox plant used in its cars. In addition the usual car illustrations are in place, supplemented by a very concise description of the car parts.

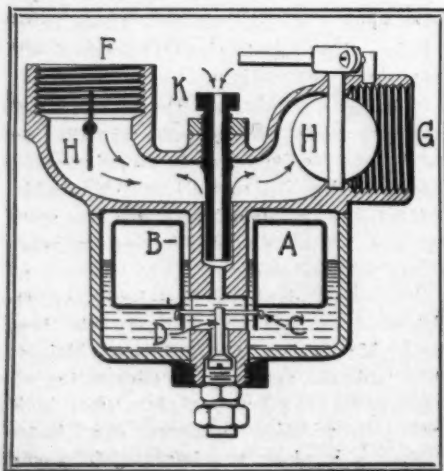
DEVELOPMENT BRIEFS

NO AIR ADJUSTMENTS

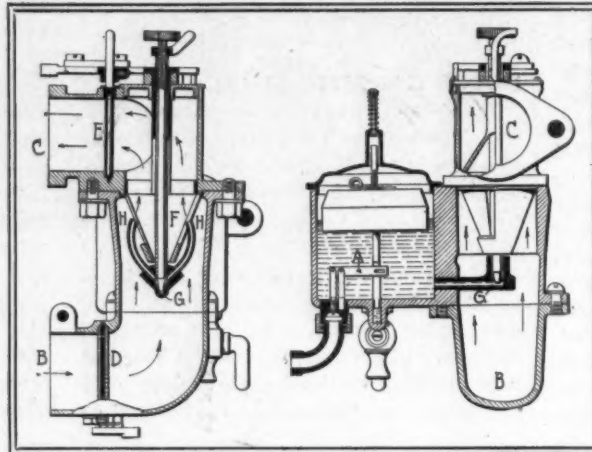
In the latest Buffalo carbureter, made by the Buffalo Carbureter Co., of the Bison city, springs and atmospheric air adjustments are not used; all changes made in its gasoline, air or mixture controls being positive on the command of the operator. The float chamber, to one side, has the gasoline entering under regulation of a cork float which operates the needle valve through a rocker arm A with a slot in one end for union with the float stem and a pivoted connection at the other end to the top of the valve stem. The mixing chamber is a vertical air passage at one side of a float chamber and air entering through a horizontal opening B at its base mixes with the gasoline midway the height of the chamber, and then exits through a horizontal opening C at the top to the motor. The air entrance is guarded by a starting valve D, the escape of mixture is regulated by a throttle valve E and the mixing of gasoline and air calls into use a revolving cone valve F, located midway of the height of the chamber. The gasoline enters at the apex of the valve under regulation of a needle valve G and rises through a pair of arching pipes HH, which have their openings in regulable air ports in the cone valve F, so that the air speed past the nozzles remains constant irrespective of the speed of the motor. This valve is interconnected with the throttle, so a movement of one produces a movement of the other, the interconnection for this purpose being adjustable.

FOR COLD WEATHER STARTING

J. H. Koontz, Culver, Ind., has on the market a simple starting valve for attaching to the air intakes on carbureters, which valve when closed obstructs the air,



THE KALAMAZOO CARBURETER

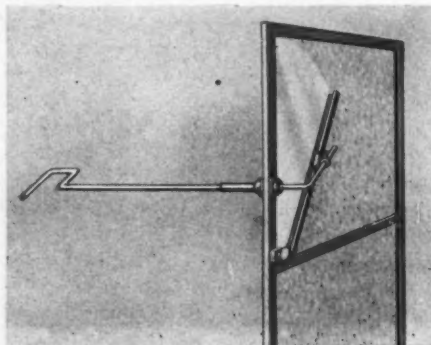


THE 1908 BUFFALO CARBURETER

increases the pull on the gasoline and so gives a richer mixture and makes motor starting easier on a cold morning. The valve is a rocking one carried on a bracket that clamps over the end of the air pipe. Ordinarily the valve is held open, as illustrated, by a spring surrounding the stud carrying the valve; but a wire rope is attached and which rope extends through to the front of the radiator so that a little pull closes the valve and, releasing the spring, allows it to open.

DIFFERENT FROM OTHERS

Three peculiarities unite in the construction of the Kalamazoo carbureter, made by the Kalamazoo Carbureter Co., of Kalamazoo, Mich.: First, the concentric float A has a brass tube B inserted in its hub part, which guides it on the central part of the float chamber; and through the bottom of this tube is a transverse pin C which passes through the top of the float valve D for controlling the entrance of gasoline into the float chamber. The connecting pin operates in a slotted portion of the float chamber hub. Second, air enters by the opening F and mixture escapes through the passage G, both controlled by butterfly valves H, one for regulating the supply of air so that on cold mornings the air supply is limited and a



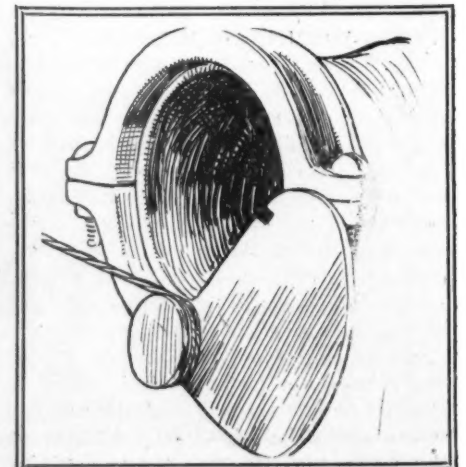
CLEANS WIND SHIELDS

richer mixture obtained because of the greater pull on the gasoline and the more of it drawn. Third, the needle valve K is novel in that it is termed an air-lift system. The valve has its lower end within a well part of the nozzle, the well being on a level with the gasoline level in the float chamber. The valve K is hollow for admitting air from the outside, so that with a heavy motor pull the air is drawn through the valve, as indicated by the arrows, and rises through the gasoline in the well, lifting it with it and carrying it into the mixing chamber. The valve is adjustable and can be set to give a suitable mixture for the varying motor

speeds. This air-lift system of drawing the gasoline although new in the motor field has had a general adaptation in several other fields of engineering.

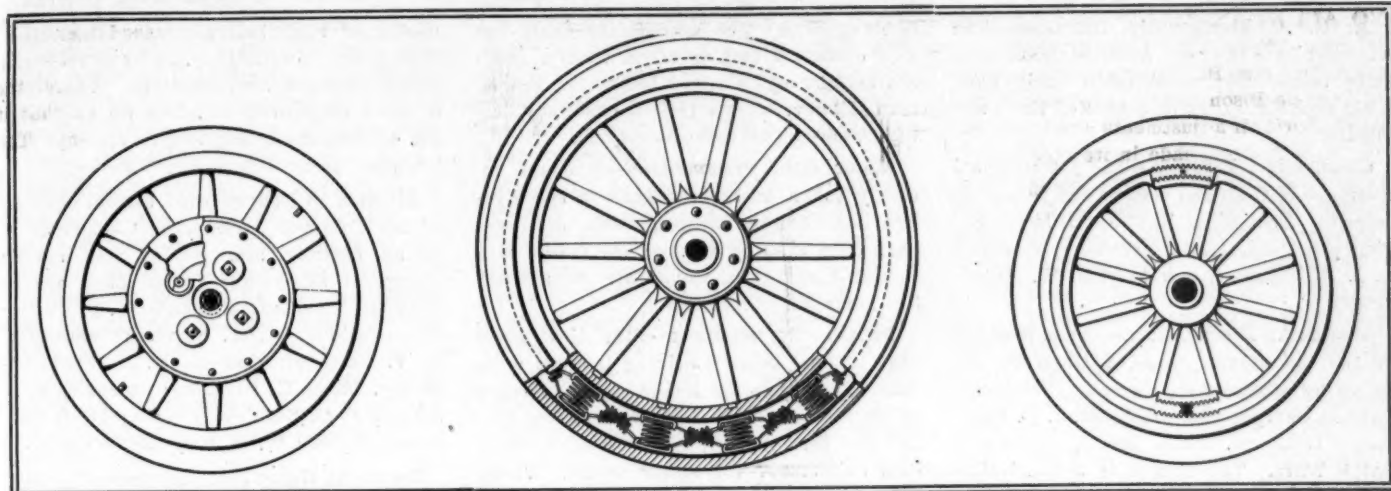
CLEANS GLASS FRONTS

Drivers are generally familiar with the discomforts arising on a rainy day, when the front surface of the glass wind shield becomes covered with moisture and rain drops, handicapping the driver in seeing the street. To overcome this to a degree Charles E. Marcher, 55 Wabash avenue, Chicago, has invented a knife blade rubber cleaner which works over the front surface of the glass. It is hinged at the lower right corner of the glass framework and is turned through a quarter of a circle over the glass by a rod passing through the right frame of the wind shield and having an offset secured into a universal bracket on the center of the holder for the rubber knife blade. The rear end of the rod extends back and has a hand piece so that it can be worked by the driver. Besides for use on the glass fronts of motor cars, it has a wide possible field on street cars and other vehicles.



THE KOONTZ STARTING VALVE

CURRENT MOTOR CAR PATENTS



BROWN'S PNEUMATIC HUB

MC CARTHY'S SPRING RIM

HORLUND'S EXPANDING RIM

Spring Rim—No. 877,856, dated January 28; to T. J. McCarthy, Los Angeles, Cal.—The wheel has two concentric rims separated by an air gap of reasonable width, which gap is filled with a double series of springs that provide the resiliency of the wheel. One series is arranged radially and forms a continuation of the spokes between the rims, whereas the other series assumes the form of Xs between the ends of the first series, serving thereby as a brace against circumferential displacement between the rims.

Pneumatic Hub—No. 877,629, dated January 28; to H. A. Brown, Lehigh, Iowa—The hub possesses two concentric ring parts, between which is a pneumatic tire or tube. Attached to the outer ring of the hub are the wheel spokes. In order to transmit the revolving motion from the inner to the outer portion of the hub a circular plate is used at each side, which plate is bolted to the outer hub and extends over the inner hub. That portion of the plate over the inner hub has recesses with flanges, and in which recesses are rollers carried on the inner hub.

Detachable Tonneau—No. 877,750, dated January 28; to W. G. Windham, London, Eng.—The tonneau is detached by the presence of a pair of longitudinal runners on the carframe and over which the tonneau slides. The tonneau when removed slides rearward, being supported through vertical supports with small wheels on their lower ends, the wheels traveling on the garage floor.

Expanding Rim—No. 877,726, dated January 28; to W. J. Nordlund, Oakland, Cal.—Used in this rim are in reality two concentric rims, with engaging cam faces whereby a part revolution of the inner rim brings its cam face into contact with that of the outer rim, thereby transmitting an expanding action to the outer

rim and clamping the tire in position on it. The expansion of the outer rim is accomplished by serrating at opposite points a portion of the rim and serrating the inner rim at the same points; this done a pinion in mesh with both serrations is interposed and revolving of this pinion works the expansion.

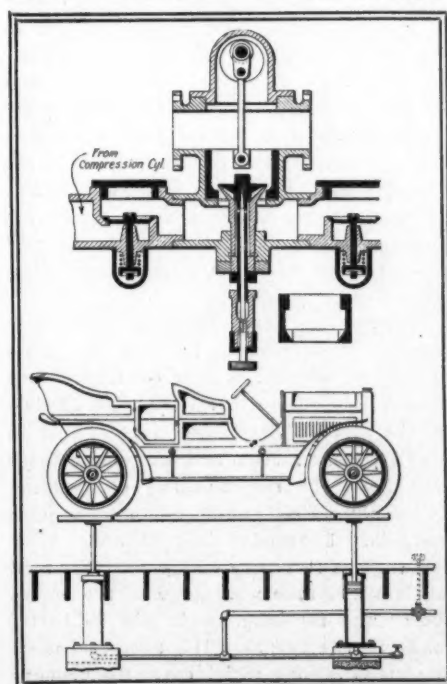
Darracq Operating Device—No. 877,762, dated January 28; to P. A. Darracq, Suresnes, Fr.—The patent has reference to the control used on taxicabs, in which the rear axle is a combined driving and stationary portion of the axle. Supporting the axle is a triangular truss rod attaching to the top and bottom of the gearset and attaching at its apex to a balance beam on the frame. The levers for oper-

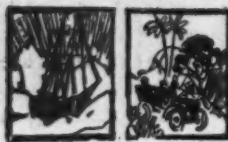
ating the change-speed gears are supported on this balance beam, so that, irrespective of the tilt on the rear axle, the change-speed connections are not impaired or interfered with.

Adjustment for Carbureters—No. 877,890, dated January 28; to G. H. Gerber and A. Weiland, Reading, Pa.—The nozzle has orifices whereby gasoline and water are sprayed into the inrushing air, the apparent object of the water being for use on dry weather to increase the value of the mixture. Coupled with this dual spraying nozzle is a concentric valve regulating the size of the air passage around the nozzle. When desired this valve can be raised or lowered.

Motor Car Elevator—No. 877,709, dated January 28; to C. W. Gearing and W. J. McGee, Franklin, Pa.—Instead of raising one wheel or axle at a time by a separate jack, arrangements are included whereby the entire car is lifted bodily from the floor. To do this channel tracks are used, one for the wheels at each side of the car; and each channel track rests on the top of a piston rod, the piston on which works in a vertical cylinder beneath the floor. By letting compressed air into the cylinders, the pistons are raised and the car lifted.

Two-Cycle Motor—No. 877,834, dated January 28; to P. Daniel, New York city—Combined in the motor referred to in this patent is a method of providing compressed air and furnishing liquid fuel that is injected into the cylinder near the valve. The method of furnishing compressed air consists in taking it into the crankcase through an opening guarded by an automatic poppet valve; the delivering is from the crankcase to the head of the cylinder through a duct or pipe which has an automatic valve controlling its union with the crankcase and another its union with the cylinder.

GASOLINE-WATER SPRAYING NOZZLE
NOVEL MOTOR CAR ELEVATOR



FROM THE FOUR WINDS



A. C. A. Membership Increased—The Automobile Club of America governors have raised the membership limit from 1,200 to 1,250 to let in a part of the waiting list.

Cincinnati Election—The Cincinnati Automobile Club has elected the following officers: President, Ray J. Hillenbrand; vice president, H. O. Brunton; treasurer, A. J. Hillenbrand; secretary, H. W. Hillenbrand.

Chauffeurs Elect Officers—At a meeting of the Chauffeurs' Club of Hartford the following officers were elected: President, Thomas Sharpe; vice president, J. D. Shattuck; treasurer, John Mead; secretary, Ralph Ware. The club is in a flourishing condition, has a good membership and is active.

Parkins Out With Defi—Joseph W. Parkin and his son, of Philadelphia, builders of the Parkin car, are out with a defi to race any car in the world, with a bore up to 4 3/4 inches, any distance from 100 to 500 miles, for money or marbles. Pere et fils each has a large-sized chip on his shoulder, and evidently mean business.

Twelve-Cylinder Challenges—Benjamin Briscoe has sent to the A. C. A. contest committee a challenge to the Stanley steamer, holder of the Sir Thomas Dewar trophy, to race the Maxwell twelve-cylinder racer for that prize. Mr. Briscoe's car was built originally for the Vanderbilt cup race of 1906. Chairman Morrell responded that the Dewar race had been stricken from the Ormond program and suggested the regular entry of the Maxwell in the mile race and record trials.

Tips Glidden Route—Secretary F. H. Elliott, of the A. A. A., spent several days in Boston last week, where he was a guest of the Bay State A. A. The Massachusetts state association held a meeting at which it took action on several of the bills now before the legislature, and Mr. Elliott was present and saw how the Bay State men hustle. Mr. Elliott incidentally said it was pretty certain the next Glidden tour would start at Buffalo, go to Pittsburg, thence along the Atlantic coast to the White mountains.

Will Use Motor Cycle—The Indianapolis police have received an Indian motor cycle which is to be used in the future for running down violators of the speed law. Several methods have been tried in the past, but it is believed the motor cycle will prove safer and more effective. Last summer plain clothes officers with stop watches and chalk lines were tried, only to be supplanted by a White steamer, which ran down the scorches and pinned them against the street curbing. The police have decided that the latter method

is dangerous. The new motor cycle has two cylinders and is fitted with a small searchlight and a speed indicator. Patrolman Gibney, at one time a chauffeur, has been assigned to the motor cycle.

Motor Cars Predominate—A count recently taken at the entrance to the Avenue des Champs Elysees, Paris, disclosed that from 3:30 to 4 p. m. 484 motor cars turned into the thoroughfare as against 318 horse-drawn vehicles.

British Registrations—Statistics show that in 1907 205,606 driving licenses were issued in the United Kingdom, an increase of 38,041 over 1906. These included 61,617 for pleasure rigs, 4,124 for commercial cars and 53,877 for motor cycles. There is an increase of 25,574 in the registration of motor vehicles of all sorts, the grand total for the kingdom, including motor cycles, being 119,618.

Wants Hill-Climb Bill—The Worcester Automobile Club, which conducted hill climbs on Dead Horse hill for a couple of years, but which was forced to abandon the event because of the state law, is trying to get a bill passed that will allow it to hold the event again. Last year a bill was submitted to the legislature, but it was so broad that it practically allowed the holding of a Vanderbilt road race. So it was thrown out. This year a bill has been drawn along more careful lines and there are hopes that it may pass the legislature.

Youthful Driver—Philip S. Tyler, aged 11, son of Frank J. Tyler, agent of the Maxwell in Boston, is the youngest driver of a motor car in New England, if not in the east. He is licensed under the Massachusetts laws, being the youngest person to get a ticket. It was not until after he had passed a special test in Boston with Chairman McClintock, of the state highway commission, in the car that he was given a license. Last year he drove his mother more than 3,000 miles, and many of the trips were sometimes more than 100 miles in length.

Lessons in Road Building—The University of Wisconsin, through its correspondence courses, is now offering a free home study course to all the road officials of the state. The instruction will be in highway construction and will enable those who have the responsibility of building and maintaining public roads to acquire up-to-date knowledge in that line. It is felt that at this time of the year the road officials will take advantage of the opportunity and that the result will be better roads in the future. The course consists of sixteen lessons, which cover the primary consideration of proper road location and of road building. Three important ele-

ments of road building are taken up—foundation, drainage and surface—and these are carefully considered. The study of road machinery is taken up and careful consideration is given to culverts and bridges.

Election in Denver—The annual election of the Colorado Automobile Club resulted in an entirely new set of men taking charge of affairs for 1908. They are as follows: President, Professor A. P. Curtis; vice president, C. A. Seymour; secretary, G. V. Newton; treasurer, C. A. Yont; attorney, James H. Pershing; executive committee, F. O. Stanley, 2 years; M. J. Patterson, 1 year; W. H. Bergtold, 4 years.

Railroads Using Speedometers—For several weeks past the New York Central and Hudson River railroad has been making a test of speed indicators such as are used on motor cars. The reason for this is that the state law governing the speed of railway trains on curves makes it necessary for the railway companies to have an indicator on the locomotive of the speed at which the train is taking any particular curve. A Hicks speed indicator has been on one of the New York Central locomotives for the past 3 weeks, and is still in active operation.

Suggests Toll Reform—It is a sign of the times that the candidate nowadays feels it incumbent on him to make known to his constituency his position on the good roads and toll abolition questions. Especially is this the case in the rural districts, those in particular in close proximity to large cities. Louis A. Nagle, of Ogontz, Pa., is a candidate for one of the commissionerships of Montgomery county, and in an open letter he proposes a scheme which, he believes, will do away with the toll nuisance in the course of years. Concerning the freeing of toll he says: "The purchasing and freeing of toll roads can be accomplished slowly by the counties, with the assistance of the state and the different townships. The plan I have in view is this: I understand, through Mr. Hunter, the commissioner of the state highway department, that there are about 1,100 miles of toll roads in the entire state. These toll roads could, in my estimation, be bought up on an average of approximately \$5,000 per mile. Now, there were more than 18,000 motor car licenses taken out in 1907 at \$3 per car, netting more than \$54,000. More licenses than 18,000 will be taken out in 1908, and a proportionately greater number in each succeeding year. If the different legislative districts would combine and put a bill through the legislature making the license fee \$6 per year instead of \$3, and apply all the additional revenue to the purchase and the freeing

of toll roads only, the question can be disposed of in a few years without any cost whatever to the counties and at the same time the roads will be kept in the same good condition."

Car for Chief Surgeon—Dr. Hubley R. Owen, chief surgeon of Philadelphia's department of public safety, has been provided with a 30-horsepower Oldsmobile, which he will use in responding to hurry calls and fires in distant parts of the city.

Motor Has Right of Way—Japan is fast catching up to the eastern world in civilization. In the detail of recognition of the supremacy of the motor car in traffic, the land of Nippon would seem to be a bit ahead of its rival nations; for among the regulations recently issued by the police department of Tokio appears the following: "Automobiles shall have precedence in the street to fire engines, post carriages and military, funeral or the processions of the people."

Busy Police Car—Interesting is the report just made of the work of the Boston police motor car that is used in the outlying district, and it proves that it was badly needed. In 2 years the car, driven by Patrolman Braur, covered 33,384 miles. Last year it was in operation 219 days and its mileage was 11,264 miles. It went to eighteen fires, forty-seven cases of different sorts were investigated, nine disturbances were quelled, two injured people were taken home and a number of motorists warned for reckless driving. Since the first of the year it has covered 1,500 miles.

New Board in Baltimore—The constitution of the Automobile Club of Maryland has been changed so as to increase the number of governors from eight to ten. A new board has been elected, the following being chosen for the year: James S. Reese, president; H. M. Rowe, vice president; Ernest Knabe, Jr., treasurer; E. A. Dolle, secretary; C. M. Dow, M. S. Hess, Frank W. Darling, Rowland Morgan, Osborne I. Yellott and Frank W. Coale. After the meeting Mr. Yellott entertained the members of the club with a talk on a "Trip Through the Wilds of West Virginia."

In Maja Hands Now—The continental touring service, which has heretofore been conducted by E. B. Gallaher, of 228 West Fifty-eighth street, New York, has been transferred by arrangement to the Maja Co., for which Mr. Gallaher is director and American manager. In addition to the branches heretofore maintained by Mr. Gallaher for the expansion of his touring service at Havre, Southampton, Liverpool, London, Stuttgart, Genoa and Bremen additional agencies will be opened in connection with the Maja branches at Hamburg, Paris and St. Petersburg. The service inaugurated by Mr. Gallaher has been decidedly helpful in its work of furnishing information and performing services in the matters of shipping, repairs, licenses,

insurance, police regulations, road maps and itineraries, chauffeurs, rental of cars, supplies and general help. The service is extended to Americans who tour abroad in any part of the world.

Land's End to John O'Groat's Trial—The Auto Cycle Union of England has decided to hold a reliability trial from Land's End to John O'Groat's in July next. Land's end is the extreme south of England, while John O'Groat is the extreme north of Scotland.

Hawaiian Reliability—A White steamer, driven by E. L. King, was the only one of eight cars to make a perfect score in the 100-mile reliability run of the Automobile Club of Hawaii January 18. Also in the competition were a Packard, three Buicks, a Ford six, a Maxwell and a Franklin. Considerable interest was displayed in this contest.

Testing Alcohol—Students of the School for Automobile Engineers of New York city are experimenting with alcohol as a motor fuel, using for the purpose a 15-horsepower four-cylinder Locomobile. The carbureter has been placed on top of the engine to facilitate the flow of the fluid. The motor always is started on alcohol, even when cold, and the car does about 50 miles a day. It is claimed that slightly higher power is obtained from alcohol than from gasoline, but it also is said a higher compression is needed to secure the best results. No attempt has been made to compare the economical qualities of the two fuels.

Jersey Speedway Planned—Several Philadelphians have just formed the Hanover Consolidated Co., of New Jersey, capitalized at \$600,000, which will build a 20-mile motor speedway in Ocean and Monmouth counties in the latter state. The new company has purchased 20,000 acres of barrens and will lay down a 100-foot-wide road. William H. Wile is president of the company; John P. Harlan, vice-president; E. T. Davis, treasurer, and George A. Kiefaber, secretary—the foregoing and S. J. Phillips, W. S. Wilson, William H. Wile, Jr., and A. McCracken constituting the board of directors. These men are Philadelphians, and the Colonial Trust Co., of the same city, has been named as trustee.

Must Have the Roads—In his annual address before the Denver Chamber of Commerce and Board of Trade, President Meyer Friedman made this important and interesting statement on the matter of good roads in Colorado: "Climate, good climate, is the one asset which we have which cannot in any manner be wrested from us by any community or combination, and this, coupled with incomparable scenery, makes Colorado the ideal place for wealthy pleasure seekers of other states to tour desirable localities by motor car. To draw to our state this class of tourists requires an investment in good roads, but no matter what the cost may be I feel reasonably sure it will prove a profitable

undertaking for the people of the whole state. We must therefore continue our efforts until they are crowned with success."

Hot After Cowards—The indignation over the action of the motorists who injured 6-year-old Catherine Lennon in Milton, Mass., recently has caused more rewards to be offered for their apprehension. The Automobile Owners' Association heads the list with \$100; the Bay State A. A. gives \$50; Frank J. Tyler, agent for the Maxwell, \$50, and C. S. Henshaw, of the Haynes, \$25, making a total to date of \$225. The police are actively at work investigating the affair.

May Lose a Boulevard—It is probable Indianapolis will have to give up its new Capitol avenue boulevard as an exclusive pleasure vehicle thoroughfare or else do without a new \$100,000 bridge that has been promised by the county commissioners. The boulevard, which was finished last summer, is several miles long, but is marred by an ancient and dangerous bridge. It is the duty of the county commissioners to build all new bridges in the city, but due to the complaints of their farmer constituents of being barred from the boulevard the commissioners refuse to build the bridge unless the boulevard is thrown open to all classes of vehicles. It is probable the city council will repeal the boulevard ordinance.

Big Banquet Promised—The annual banquet of the Automobile Club of Philadelphia is scheduled for Friday evening, February 28. Among the prominent lights who have accepted invitations and who will probably respond to toasts are: Colgate Hoyt, president of the A. C. A.; John Bancroft, president of the Delaware Automobile Association; Osborne I. Yellott, president of the Maryland State Automobile Association; Charles T. Terry, of the A. A. A.; Robert C. Hooper, of the Pennsylvania Motor Federation; Robert B. Caverly, president of the Automobile Club of Washington, D. C., and Cortland Field Bishop, president of the Aero Club of America. Prominent state and city officials are also down for responses.

After the Supervisors—Road supervisors and constables of Lackawanna county, Pa., are beginning to sit up and take notice. The Scranton Automobile Association, through its attorney, Hugh B. Andrews, is after them with a big stick. For the past 2 months members and agents of the S. A. A. have been quietly inspecting every road in the county. Missing sign boards at crossroads and forks, loose stones, choked-up ditches, unrepaired washouts and all other defects have been taken cognizance of, and the supervisors and constables have been informed that if they don't get busy at once and remedy them they will be proceeded against for neglect and compelled to pay fines as provided for in the several acts of assembly relating thereto. They evidently mean business.



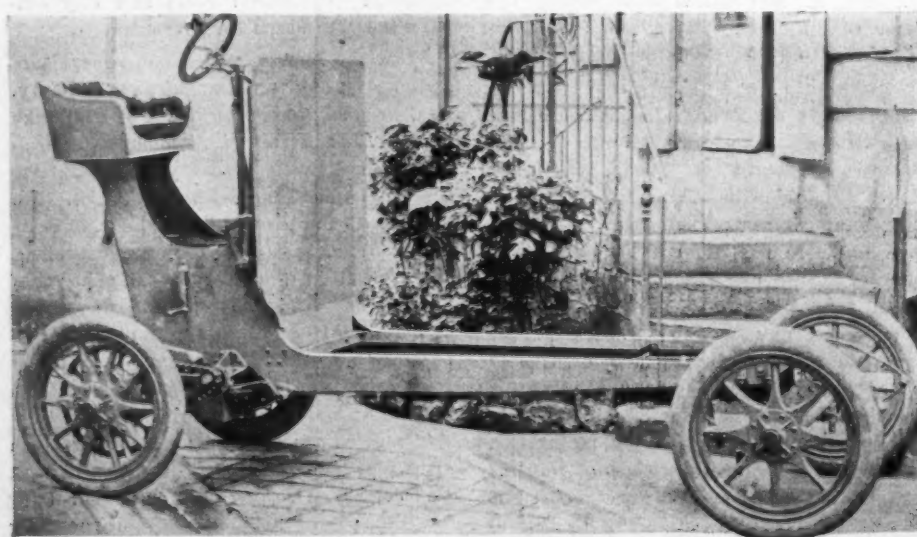
THE LATEST PRODUCTION IN A LIGHT COMMERCIAL CAR MANUFACTURED IN FRANCE

TO Rouquette and Valbreuze, two inventive Frenchmen, belongs the credit of bringing out one of the most interesting light commercial vehicles of last year. This little machine, capable of carrying a load of 1,320 pounds of merchandise, proves its reliability by its record in the British commercial trials during the past season, and is termed the Roval—the name being formed by taking the first two letters of Rouquette and the first three letters of Valbreuze. While entirely different from the American Orient buckboard, none the less it calls it to mind because of the use of a single-cylinder motor, and the carrying of it well to the rear, leaving the forward part of the car the load carrier; but the Roval goes much further in that it places the driver—hansom-like—on an elevated seat in rear of the back axle, with

the entire load space ahead of him. The real merit of the Roval further appears by placing the one-cylinder 6-horsepower de Dion-Bouton motor immediately in front of the rear axle on the left side, where it is covered by a removable bonnet. The driver occupies the right side of the chassis at the rear and the motor occupies the left. One of the illustrations reveals the rear of the chassis with the motor cover off, disclosing the mono-cylinder power plant with its Simms-Bosch high-tension magneto for ignition; its big water tank immediately in front of the cylinder, while the tubular radiator is in front just behind the forward axle; its gasoline tank higher up on the framework, practically directly above the water tank; its oiler on the rear of the dash and directly in front of the driver; and the other motor parts.

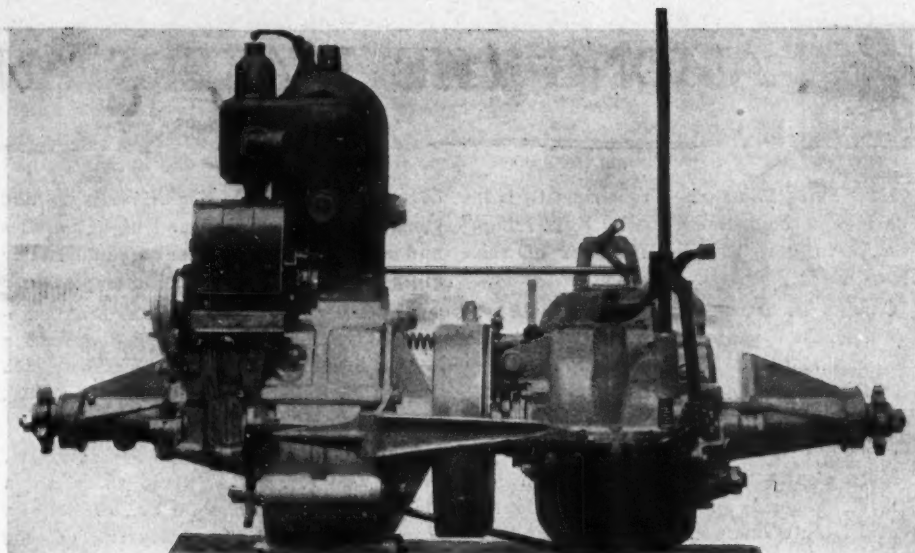
Such is the design of the Roval, a decidedly unique machine with its motor, cone clutch and three-speed gearset hung en bloc on a three-point suspension, and with drive from the ends of the countershaft by side chains to the back wheels. Up to this time no commercial car with this carrying capacity has been brought out that has succeeded in fitting so complete and compact a power and gear plant without infringing on the space for carrying the load. In the Roval everything is behind the dash; the vehicle is a motor car paradox—the driver sits in rear, all parts are behind the dash, the load is carried in front of the dash, and nothing is beneath the load-carrying space.

In this little Roval are exemplified not a few continental tendencies, and a review of them by way of contrast with American tendencies will not be without its interest. The foreigner has always had great faith in the mono-cylinder engine of the vertical type; whereas Americans have practically discarded it, preferring, where one cylinder is used to place it horizontally, yet on all occasions doing away with the single-cylinder design and adopting two opposed cylinders placed horizontally under the body amidship or mounting them transversely in front. Of further contrast is the use of a magneto on a single-cylinder car, with batteries in reserve—a double ignition outfit. This shows the importance of ignition as considered abroad, and the value placed on time, it being considered imperative in foreign shops to make the commercial car as foolproof as possible, because loss of time means its downfall. Next the employment of a three-speed gearset of the sliding variety should be noted. Americans would have fitted a friction set or a



PRESSED STEEL FRAMEWORK OF THE ROVAL CAR

planetary giving two forward speeds. Abroad the epicycle, or planetary as we call it, has a most limited following and it is remarkable to note how the foreign designer will on the smallest car design a selective or sliding set in place of the planetary or friction. It is true one or two makers have adopted the planetary and as many the friction set, but the great majority prefers the selective. Then, too, the reader must not pass over the detail and care shown with the pressed steel framework, which is carried to intricacy by its rear curving upward at the ends of the dash to form a support for the driver's seat and other parts. This is characteristic of the French, who are good metallurgists and who always have delighted in mastering the art of steel work in making frames. All of them like to imitate the results accomplished by Darracq in his earlier models. It is rarely that a designer accomplishes the feat of carrying a motor, cone clutch and three-speed sliding gearset transversely of a car and then having ample room at either side. In accomplishing this Rouquette and Valbreuze have resorted to one or two nice constructions. In order to reduce the space occupied by the cone clutch with its coil spring for engagement, the spring is housed within the shaft of the gearbox, thereby placing the gearbox flush with the edge of the flywheel. The gearbox design, too, has been reduced to a minimum of interior space in spite of the use of large-diameter gears. Three brakes are fitted, a band on the differential and two expanding brakes within the rear wheel sprockets. One set is lever-applied, the other pedal. The steering wheel is mounted on a very short inclined column which drives through a bevel gear to a vertical column rising on



DE DION-BOUTON MOTOR AND GEARSET IN ROYAL CAR

the rear side of the dash. From the base of this column the usual connections with the steering knuckles are made. Front springs are three-quarter elliptics clipped beneath the straight forward axle; and the full-elliptic rears are secured above the stationary back axle, which is slightly arched centrally to give the rear wheels the same amount of dish employed in the front wheels.

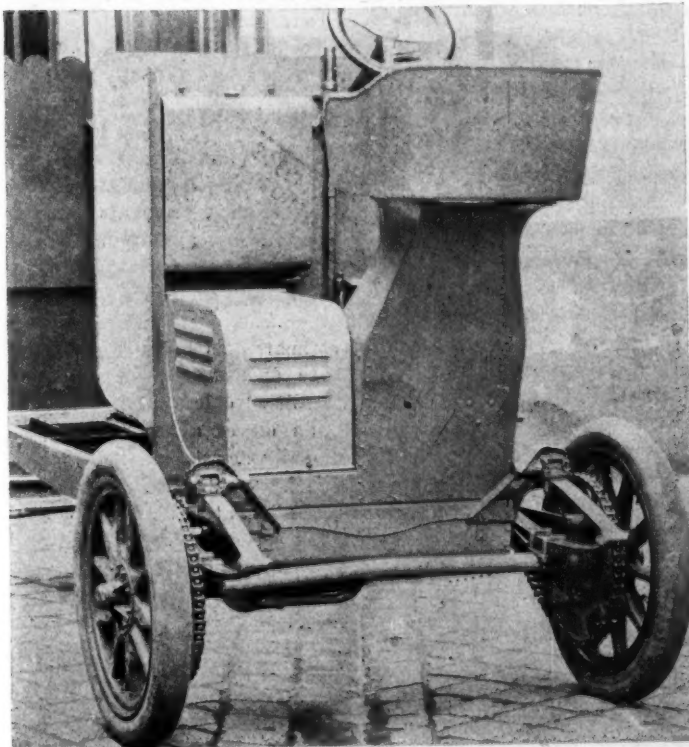
COMMERCIALETTES

Edinburgh, Scotland, is introducing taxicabs that have been built by the house of Argyll, a Scotch company.

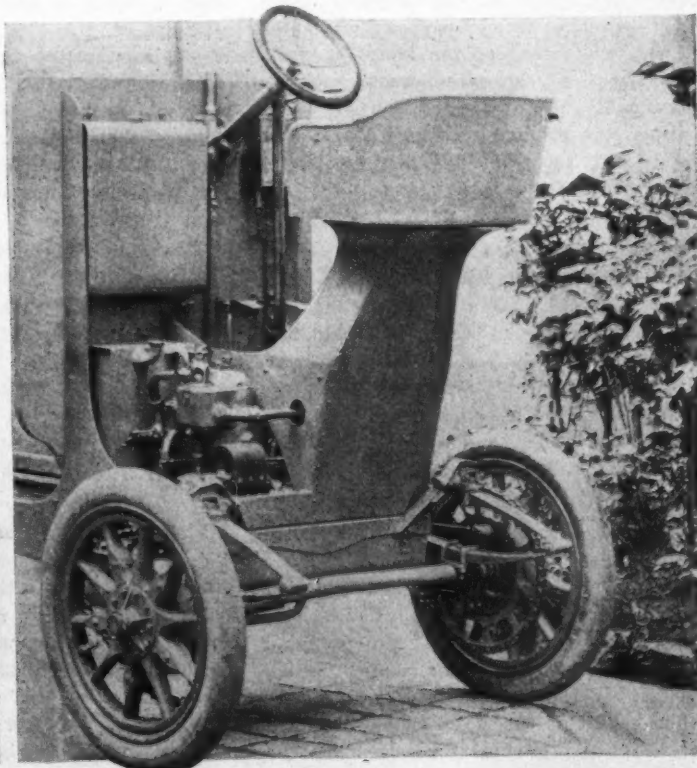
The Mosher Grocery Co., Chillicothe, O., used to use three horse wagons for delivery work, with four or five required for Saturday trade. The recent introduction of a Logan delivery car has resulted in the

displacement of three wagons used on all days of the week except Saturdays, on which day a one-horse wagon is used to assist the motor delivery.

L. E. Clute and Albert H. Adams, of Oshkosh, Wis., have invented a motor sleigh which they have used of late on the ice on an adjacent lake. The sleigh uses four runners corresponding with the four wheels of a motor car and has for propulsion a pair of wheels carried on a crossshaft midway of the front and rear runners. On each end of the crossshaft is a wheel with patent cleats for the prevention of slipping. A 3½-horsepower motor carried in front drives to the crossshaft through a series of chains. Six people have been carried at a speed of 25 miles per hour.



HOOD IN PLACE OVER MOTOR AT LEFT OF SEAT



THE ROYAL COMMERCIAL CAR MOTOR EXPOSED, SHOWING PARTS, MAGNETO AND TANKS



AMONG THE MAKERS AND DEALERS



Now Sales Manager—From rims to ball bearings is the switch made by R. L. Kingston, who now is sales manager of the Hess-Bright Mfg. Co.

Change at Utica—Frank E. Henabray, for the past 3 years with A. J. Baechle & Co., has resigned his position to become secretary and treasurer of the New York Automobile Co., central New York agent for the Ford.

More Continental Agencies—Joseph M. Gilbert, general manager of the Continental Caoutchouc Co., announces that two more distributing agencies have been added, the Long Island Auto Supply Co., 1249 Bedford avenue, Brooklyn, and the Acme Rubber Co., of Toledo, O.

Mitchell Plant Busy—William Mitchell Lewis and James W. Gilson, of the Mitchell Motor Car Co., which in New York last week stated that the factory at Racine Junction was running full time and had turned out 450 cars of the contemplated 2,000 output since October 1.

Empire Opens a Branch—The Empire Automobile Tire Co., of Trenton, N. J., recently opened an uptown branch in New York city, at the juncture of Broadway, Seventy-third street and Amsterdam avenue. The store faces the Seventy-second street subway station and a small park.

Fire in a Warehouse—In the burning of the Coburn warehouse at Indianapolis the Premier Motor Mfg. Co. and the American Motor Car Sales Co. both suffered losses. The loss of the former company was about \$6,500, while that of the latter company was about \$1,000. The warehouse was presumably fireproof, but proved to be only a slow-burning structure. It is estimated that the whole loss will amount to about \$750,000.

Denver Is Prosperous—Denver dealers declare the financial troubles in the east have had no perceptible effect upon the trade in Colorado. In fact, they look for the most prosperous season in the history of motoring in Denver. This prognostication is borne out by the fact that the 1908 contracts call for more cars than have ever before been contracted for. The spring trade is opening up briskly, and everything points to a big year in the business.

Talking Show Week—The New York Automobile Trade Association has made Thomas Francis Moore, who is also prominent in the promotion of the Westchester stock car race, manager of the proposed trade carnival week in April. Each Wednesday the dealers interested in the scheme meet at the Hotel Cumberland for luncheon and general discussion of the project. At the last meeting the finance committee reported \$5,800 subscribed by

over thirty concerns for advertising and general expenses. Day and night parades and a big run to some suburban hostelry are among the features in contemplation.

Boston Branch for Fiat—The Fiat Automobile Co., of New York, has opened a Boston branch at 885 Boylston street, with Simeon H. Baker, formerly of the John W. Bowman Co., as manager.

From Salesman to Agent—George A. Clark, who for a year acted as salesman for the Smith Automobile Co., of Denver, representing the manufacturers of the Smith at Topeka, Kan., is now himself agent for that car, with offices at 1620 Court place.

Hibbard Starts Again—The W. L. Hibbard Motor Car Co. has been organized in Milwaukee by W. L. Hibbard, who recently disposed of his interests in the Hibbard Automobile Co. The new concern will conduct a garage and repair shop and also will carry a stock of pleasure and commercial cars.

Plant Soon to Start—Officials of the Maxwell-Briscoe company are securing information as to the number and capacity of boarding houses at Newcastle, Ind., where it expects to soon have its new plant working with 1,500 men. At the present time the various departments are working with portable engines, and 100 more men are to be put to work at once.

Boston Agent for Fiat—Simeon H. Baker, formerly with the Stevens-Duryea agency in Boston, has now taken the agency at the Hub for the Fiat, which was formerly handled in Boston by the Harry Fosdick company, but when Mr. Fosdick joined the Hol-Tan company in New York and the company lost the importing business the Boston company dropped the Fiat from its list.

New Prest-O-Lite Plant—The new Prest-O-Lite plant No. 5, located at Indianapolis, Ind., is 70 by 200 feet, two stories high and with a basement, with 28,000 square feet of floor space. The building is built of steel and reinforced concrete. It is fireproof throughout. The building was occupied on the first of this year. The capacity of this plant, it is stated, is 2,000 cylinders daily.

More Room for Hess-Bright—The Hess-Bright Mfg. Co. declares it has been found necessary to make a third change to larger quarters and that it will shortly occupy a four-story building, with a floor space of 15,000 square feet, exclusive of the basement, which is given up to a modern construction gas producer power plant. Aside from the DWF ball-bearing division, this is claimed to be the largest plant devoted exclusively to the manufacture of ball-

bearings of only one grade, that of the annular type. The new quarters will be occupied some time within the next 6 weeks.

Take on Two Foreign Cars—Jacobs & Bartlett, who recently opened a place in Boston for the Allen-Kingston cars, have added the Mercedes and de Dietrich to their list.

Miles Going to Europe—S. A. Miles, general manager of the N. A. A. M., will sail for Europe on February 26 for a motor car tour of several months in England and on the continent.

New Franklin Agents—The Wyoming Valley Motor Car Co., of Wilkes-Barre, Pa.; the Waterloo Auto and Supply Co., of Waterloo, Ia., and the Henderson Auto Co., of Cedar Rapids, Ia., have been added to the list of Franklin dealers.

Ford Branch in Denver—The first motor car building concern to establish a branch house in Denver is the Ford Motor Co. Charles Hendy, Jr., lately handling other lines of gasoline motor cars as salesman in this city, has been appointed manager. He is established in a large store room at 1556 Broadway, and a full line of sample cars are on exhibition. This branch will supply cars for Colorado, Wyoming and New Mexico.

Wayne Optimism—If any doubts exist in the minds of the pessimists as to the outlook of the coming season, all they need to do is to take a trip to the Wayne factory in Detroit and have a look at the 1908 order books, say the Wayne officials, which show three times as many bona fide sales for January, 1908, as it did in January, 1907, it is claimed. From Cleveland, Seattle, Chicago, San Francisco, New York, Denver, Los Angeles and Milwaukee, agents report excellent prospects and two of these agents have already asked for more cars than their original allotment. Secretary-Treasurer Charles L. Palms, who is at the head of the Palms estate, variously estimated as being worth from \$18,000,000 to \$25,000,000; an officer in one of Detroit's oldest and strongest banks, and an officer actively interested in a Detroit daily newspaper, says regarding the financial conditions, present and future: "This is but a flurry incidental to the overthrow of unscrupulous Wall street jobbing and maintained largely for political motives, and it can be effective but a short time. I speak, not from hearsay but from positive information from capitalists and men of affairs with whom I am constantly in touch. With all things as they are from one end of this country to the other, this unsettling of the credit system will soon

adjust itself, and before the season is ended there will be a shortage of cars of the reliable and moderate-priced make."

New Car Promised—Beck & Clausel, 204 Cox avenue, Memphis, Tenn., are about to put a new car on the market after designs of A. C. Menges, late of Grand Rapids, Mich. Though all details have not been definitely settled a four-cylinder car of medium price, high power and light weight will be made.

Fire in Lowell, Mass.—A few nights ago a building in Lowell, Mass., owned by Charles J. Glidden, caught fire and before the blaze was extinguished it damaged a number of motor cars to the extent of \$20,000. The building is occupied by the Lowell Automobile Co. and in the garage at the time were about fifty cars. The building was damaged to the extent of \$1,000. It was insured.

Stillman Withdraws—Harold B. Stillman has withdrawn from the West-Stillman Motor Car Co., Philadelphia agent for the Pennsylvania, Waverley and Mercedes cars, and will hereafter manage the Knox department of the Foss-Hughes Motor Car Co. in the same city. Besides the Knox, the latter concern handles the Pierce-Arrow and the Cadillac, but Mr. Stillman will devote his energies especially to the exploiting of the commercial vehicle end of this rapidly-growing concern's business.

Buy a Pope Property—E. C. Stearns & Co., of Syracuse, N. Y., have purchased from the directors of the Pope Mfg. Co. the interest which that company held in the Stearns plant in Oneida street. The consideration was \$25,000. The transfer was made by Albert L. Pope, Egbert J. Tamblin and George A. Yule as receivers of the Pope company. The Stearns company gives to the Onondaga County savings bank a mortgage of \$25,000 on the property. August 17, 1899, the same property was conveyed by E. C. Stearns and his wife, Louisa A. Stearns, and Avis Van Wagenen to the American Bicycle Co. The

Pope company secured it by deed from the American Bicycle Co. November 24, 1903.

Sub-Agent for Reo—The Reo is to be handled in Walworth, Racine and Kenosha counties of Wisconsin by the Automobile Supply Co., of Burlington, Wis., which has secured the sub-agency from the Curtis Automobile Co.

New Syracuse Concerns—Julian S. Brown and Charles G. Henna have formed the Genesee Garage Co. in Syracuse, N. Y., and will open a garage in West Genesee street, at the corner of North Franklin. The company will have lockers for patrons, a chauffeurs' room, a women's waiting room, and will sell supplies. The Auto-Transit Co., of Syracuse, has been formed, with a capital of \$5,000, to conduct a sight-seeing business. W. H. Murphy is president, Edwin C. Burbridge vice-president and treasurer and Simon G. Schlachter is secretary.

New Knox Officers—A reorganization of the Knox Automobile Co., of Springfield, Mass., which assigned on July 22 last, is announced. Alfred N. Mayo, Charles L. Goodhue, Charles H. Beckwith and Peter Murray, all of Springfield; Charles E. Whitney, of Hartford, Conn.; William E. Wright, of Springfield; W. H. Chase, of Leominster; M. J. Greenwood, of Gardner, and H. W. Cutler, of North Wilbraham, have been elected directors and Charles L. Goodhue has been chosen president and treasurer. The creditors, whose claims aggregated \$957,600, have accepted preferred stock in settlement. The financial statement of the trustee from the date of the assignment on July 22 of last year to January 25 of this year was read and showed a remarkably healthy condition. During that period sales of cars and parts were made to the extent of \$178,833, and with receipts from all sources amounted to \$232,368. The total expenditures, including the pay rolls of \$103,000, and expenditures for new materials, amounting to \$64,700, were \$224,000, leaving a cash balance on hand, with no general liabilities, of

more than \$6,000. The company has resources amounting to about \$1,000,000 and practically no liabilities at present, it is claimed.

Tire Concerns Double Up—The Detroit branch of the G & J Tire Co. will remove at once from 247 Jefferson avenue to 256 Jefferson avenue and occupy part of the Hartford Rubber Works Co.'s branch store at that number. The individuality of the two concerns will of course be maintained. H. C. Severance continues as manager of the Hartford Rubber Works Co. and Charles S. Monson, of the G & J Tire Co.

New Garage for Racine—The Miller Motor Co., which has been engaged in business in Racine, Wis., for the last 2 years, has purchased a frontage on the main street of that city and the building of a big one-story garage is to be started soon. The entire floor space will be in one room 44 by 120 feet in size. The structure will cost in the neighborhood of \$5,000.

Hearsey Adds to Line—A change in agencies has been made at Indianapolis, where the H. T. Hearsey Vehicle Co. has taken the Ford agency, held by the Gibson Auto Co. last season. This season the Hearsey people will handle the Ford, White, Pope-Waverley, Rambler, Marmon, Overland and Marion, the largest line it ever had. The company has removed its carriage and buggy repository to the upper floors, using the first floor exclusively for motor cars.

Creditors' Meetings Called—Robert F. Tilney, referee in bankruptcy, has called a meeting of the creditors of the Breese, Lawrence & Moulton Motor Car and Equipment Co. for February 13. The meeting will be held in the postoffice building, Brooklyn, and it will pass upon such bids as may be received for the purchase of the bankrupt's estate at private sale. A meeting of the creditors of the Harrison Wagon Co. will be held in Grand Rapids February 10, when a trustee will be appointed, it is announced.



NEW PREST-O-LITE PLANT IN INDIANAPOLIS



EMPIRE AUTOMOBILE TIRE CO. BRANCH IN NEW YORK



LEGAL LIGHTS AND SIDE LIGHTS



WORKING FOR FEDERAL BILL

Building his fences for the fight he must make at Washington in the near future, when the judiciary committee will take up his proposed federal law, Charles Thaddeus Terry, chairman of the A. A. A. legislative board, appeared before the Long Island Automobile Club one night last week and spoke at length on the measure, outlining the need of a uniform motor vehicle bill. He said: "Great injustice is done by the varying and various state laws regulating the registration and identification of motor cars, creating a system which is well nigh intolerable to motorists in the use of our highways. It is unquestionably unfair that motorists in the use of the interstate highways should be obliged to submit to the diverse state regulations as to registration and identification when such state requirements result in the imposition of as many different taxes as there are states through which the motorist passes. There should be some system of identification which shall be uniform and which shall be effective. The varying requirements before referred to defeat the very object of the different state statutes because they result in confusion instead of clear identification. Such uniform system of identification will be absolutely secured by the federal bill, which seeks to do nothing with regard to the regulation or limitation of restriction of motor cars or motorists, except in the respect of registration and identification. The enactment of this bill into a law would result in a revenue of at least \$250,000 to the federal government annually. The bill does not involve the government in any expense except for the clerical work of the registration bureau, and it does not call for any federal police or other machinery to enforce it."

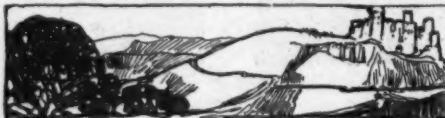
JAIL SENTENCE FOR MOTORIST

Eighteen months in jail was the sentence handed out by Judge Ten Eyck, of Newark, N. J., to Dr. Walter H. Morris, who is charged with causing the death of Marcus J. Jacobs last September, the fatality occurring as the result of Morris running amuck with a motor car, Jacobs being struck as he was alighting from a street car. Morris never stopped to learn the damage, but continued his seorch. The judge declared the killing to be due to "gross negligence" on the part of Morris and characterized it as a "cowardly violation of common decency." In sentencing the prisoner, the judge did not spare Morris, saying: "It is true, as your counsel has just stated, that there was no criminal intent on your part, but you were guilty of gross negligence and reckless dis-

regard for the safety of people on the public street. A more extreme case of recklessness could hardly occur. The death of Mr. Jacobs, a highly respected man, under the circumstances, shocked the entire community. After you had indulged in drinking intoxicating liquors with your companions you drove your high-power motor car at great speed through Broad street, in the center of the city, at about 4:30 p. m., when the street was crowded with people. Mr. Jacobs had just stepped off a trolley car and was about to go to the sidewalk when your machine struck him with great force, while you were going at high speed and without giving any warning signal. You knew he had been struck and probably seriously injured, but continued at high speed down Broad street and out of the city, doing further damage later on. It was not until several days later that you concluded to surrender yourself to the public authorities. Such conduct was not only the extreme of disregard for the safety of others, and a cowardly violation of common decency, but your recklessness supplied the place of the evil or criminal intent required to constitute a criminal act and makes you responsible under the criminal law for manslaughter. Both as a punishment to you and a warning to others using the highways that gross recklessness resulting in injury to others will be adequately punished it is the duty of the court to impose a severe penalty in this case."

TOO GOOD TO BE TRUE

Frank Billings, a wealthy Marlboro Mass., motorist, went through Spencer, Mass., on his way to New York last week. Officer H. P. Draper, of Spencer, thought Billings was going almost 30 miles an hour, so he telephoned East Brookfield to have him held up. Billings was traveling so fast he beat the telephone to East Brookfield, but was held up in Warren by Deputy Sheriff W. E. Tarbell, who returned with him in the car to Spencer. There Billings told Officer Draper he had to speed his car to the limit down hill to avoid swerving in the soft snow and striking a wagon which contained a woman and child. He said if the officer still thought he ought to be arrested he was willing to stand trial. But Officer Draper said he believed the explanation a truthful one and that Billings might go. This was a happy surprise to Billings and since he has told of the affair there are many who are inclined to believe it too good to be true.



WHEEL TAX FOR CHICAGO

Chicago's city council passed the wheel tax and wide tire ordinances at its meeting Monday night, both to go into effect May 1, 1908, and now the motoring forces are preparing to attack the validity of the law which most concerns them—the wheel tax. It is not that they object to helping in keeping the roads in condition that they are objecting to the measure, but they are finding fault with the inequality of the rates set by the aldermen. For instance, a one-horse rig is assessed only \$5, while the owner of a two-passenger motor car must pay \$12 a year for the privilege of using the city streets. Two-horse rigs will pay \$10; three-horse, \$15; four-horse, \$25; six or more, \$35; touring cars, \$20 and motor trucks and buses, \$30. The city figures there are 2,000 runabouts, 5,000 touring cars and 1,000 motor trucks in use in the city, and that from this source alone \$154,000 can be raised. In all it is anticipated \$726,000 will be secured from the owners of 82,000 vehicles, motor and otherwise. Probably it will cost \$26,000 to collect this and the remaining \$700,000 will be expended on the maintenance of the streets of the city. The motorists will not be alone in their fight on this measure, for it is said the team owners also will tackle the proposition because of the queer angles which make them pay a wheel tax on every rig, no matter if they have one team and four or five wagons. The motorists think there are many loopholes, one of which is that the city must guarantee the motorists the use of every street within the city limits, which is declared to be impossible because the park commissioners control many miles of boulevards over which the city has no control. Another point is that if the park commissioners so will it they can pass a wheel tax ordinance of their own and compel the owners of motor cars to pay twice. Another point is the one brought up by S. P. Irwin, of Bloomington, Ill., as told in the previous issue of Motor Age, in which he calls attention to the Collins case and traces the similarity between the case of the cyclist and that of the motorist, claiming that "the fact that the city now has express legislative authority does not remove the constitutional objections to which the ordinance was originally subject." It is expected the wide tire ordinance will prove of great aid in keeping the streets in condition, as now the rigs must have tires ranging in width from 1½ to 8 inches, according to the load carried. The Chicago Motor Club is preparing to wage a legal battle. It now is at work on a plan to begin injunction proceedings against the city of Chicago.



BRIEF BUSINESS ANNOUNCEMENTS



Columbus, O.—L. C. Parrott has been appointed receiver of the American Auto Brass Co.

New York—Plans have been filed for the erection of a garage and loft building at 215-217 West Forty-ninth street.

Rockland, Me.—C. E. and H. T. Rising are now located in their new sales room and repair shop at 468 Main street.

Newark, N. J.—The Star Motor Car Co., of Halsey street, has closed a contract for the agency in New Jersey for the Puritan gas tank.

New York—Sheldon & Becker have leased for W. T. Walton to the N. S. U. Motor Co. the stable at 206 West Seventy-sixth street.

Cleveland, O.—The Ohio Motor Car Co., formerly located on East Ninth street, is now in its new building on Euclid avenue near East Twenty-first street.

New York—Schedules in bankruptcy have been filed by the Da-An-Nite Auto Supply Co., of 1912 Broadway, with assets of \$16,724 and liabilities of \$7,263.

Cleveland, O.—Edwin A. Englebert has been appointed eastern representative of the Bowser Tank Co. and will leave for Philadelphia to take up the new work.

Philadelphia, Pa.—W. R. Walton, the manager of the local branch of the Firestone Rubber Co., is now located in his new quarters at 256 North Broad street.

Boston, Mass.—Roy A. Faye, the agent for the Matheson, has closed his garage at 92 Massachusetts street. In the future Mr. Faye will devote his entire attention to his garage in Cambridge.

Buffalo, N. Y.—The Chester Auto Co. has been incorporated with a capital stock of \$7,500, to manufacture motor vehicles by A. J. Chester, E. E. Williams and Fred D. Russell.

Chicago—The Automobile Owners' Repair and Supply Association has been incorporated with a capital stock of \$5,000 by H. J. Hodge, R. S. Tapling and H. E. Randall.

Orange, N. J.—Osborn & Norton have purchased the agency for the Moline from John Meyers. They will open a salesroom and garage at 20 Railroad place, East Orange.

Pittsburg, Pa.—Application was made on February 3 for a charter for the Iron City Automobile Co., which will buy, sell and deal in motor cars, accessories and supplies.

Baltimore, Md.—Robert H. Carr, Jr., and William S. Bansemar have been appointed receivers for the Auto Supply and Storage Co., of 1416 Madison avenue. The company maintains its assets are greatly

in excess of its liabilities, and that with sufficient time it will be able to pay all its creditors.

Newark, N. J.—W. S. Maltbie, who has the New Jersey agency for the Corbin, is shortly to open a local salesroom at the Calvert Zusi salesroom, on Clinton avenue.

Brockton, Mass.—The American Motor Co., of this city, manufacturer of the M. M. motor cycles, is about to open a salesroom in Boston. It has rented quarters at 218 Clarendon street.

Camden, N. J.—The Rowe Motor Co. has been incorporated with a capital stock of \$100,000, and will manufacture and deal in motor cars. J. A. Higgins, M. L. Berry and John M. Tobin are the incorporators.

Newark, N. J.—The Mitchell Motor Car Co. is now located in its new garage at 290 Halsey street. Edward P. Cooley, who has been connected with the Mitchell company for several years, is the manager of the branch.

Philadelphia, Pa.—Prescott Adamson, of Broad and Spring Garden streets, has been appointed sole agent in eastern Pennsylvania for the Renault car. Mr. Adamson is the representative of the Columbia gasoline and electric.

Rochester, N. Y.—The Rochester Automobile Dealers' Association has been organized with the following officers: President and chairman, William C. Barry, Jr.; vice-chairman, George Bauer; secretary, A. M. Zimbrich; treasurer, T. J. Northway.

New York—The Niagara Livery and Motor Car Co., of New York city, has been incorporated with a capital stock of \$5,000, and will deal in motor cars, etc.



New York—P. and H. Tire Co.; capital stock, \$20,000. Incorporators: R. G. Howell and Edward Tabor.

Babylon, N. Y.—Turbine Motor Co.; capital stock, \$12,000; to engage in the manufacture of motor cars, gasoline motors, etc. Incorporators: Paul Krause, Joseph Covert and D. Sanderman.

New York—Hotchkiss Import Co.; capital stock, \$5,000; to engage in the manufacture of motor cars and accessories. Incorporators: J. M. Bessey, Charles N. Foster and John A. Breitbach.

Kankakee, Ill.—Kankakee Automobile Mfg. Co.; capital stock, \$250,000; to engage in the manufacture of motor cars and accessories. Incorporators: W. P. Dixon and H. S. and E. M. Dixon.

Cleveland, O.—Cleveland Spark Plug; capital stock, \$10,000. Incorporators: H. L. Smith, J. D. Chambers, J. R. McGuigg, George B. Reilly and Louis Hatch.

Terre Haute, Ind.—Wabash Auto and Electric Co.; capital stock, \$10,000; to deal in motor cars. Incorporators: F. S. Lewis, A. E. Hays and T. P. Frank.

The incorporators are Joseph P. and Mary J. Ryan, William and Fanny E. Burrows, all of New York.

New York—The Palmer & Singer Mfg. Co. has signed a contract for the local representation of the Selden.

Dover, Del.—The Motor Omnibus Co., of Wilmington, has been incorporated with a capital stock of \$50,000.

Cincinnati, O.—Work is being rushed on the garage of the Citizens' Motor Car Co., and the company expects to be installed in its new quarters by February 1. The concern has the agency for the Packard.

Trenton, N. J.—The Swift Auto Garage Co., of this city, has filed articles of incorporation with a capital stock of \$20,000, and will conduct a garage. The incorporators are Charles W. S. Monro, Robert H. Engle and David L. Swift.

New York—The American Auto Rim Co. has been incorporated with a capital stock of \$100,000, and will engage in the manufacture of motor cars, vehicles, etc. The incorporators are William E. Burroughs, J. W. Cavanagh and J. N. Art.

Syracuse, N. Y.—The Auto Transit Co. has been incorporated with a capital stock of \$5,000, to engage in the manufacture of motor cars, wagons and vehicles. The incorporators are William H. Murphy, Edward C. Burbridge and S. G. Schlachter.

Poughkeepsie, N. Y.—William Lawson, of Peekskill, has announced he has secured the services of Thomas Bushnell, who has been with the Mora Motor Car Co., of New York city. Mr. Lawson has the agency in eastern New York for the Pope-Hartford.

Jefferson City, Mo.—The Firestone Tire and Rubber Co., of West Virginia, has filed articles showing that it has been incorporated under the laws of that state, with a capital stock of \$500,000, of which \$5,000 is to be employed in Missouri. The company maintains an office in St. Louis.

Buffalo, N. Y.—The O. K. Machine Works, of 887-889 Main street, have filed a certificate of involuntary bankruptcy. Among the petitioners are George D. Pine, of New York city; the Post & Lester Co., of Hartford, Conn., and the Dragon Automobile Co., of Philadelphia. The insolvent firm was engaged in the manufacture of motor supplies.

Trenton, N. J.—Mrs. Clark Fisher, the present owner of the Fisher and Norris anvil, has decided to add a motor car department to the anvil plan, to be used chiefly for the repairing of cars. Harold Fisher Brooks, of Elizabeth, who formerly was connected with the Standard Motor Construction Co., of Jersey City, has been engaged to manage the department.

WINTON



The better grades of four-cylinder cars cost as much to buy and a lot more to run than does the six-cylinder Winton Six-Teen-Six. Thus the financial advantage urges the good sense of being up-to-date, to say nothing of the supreme satisfaction in driving that only the six affords.

Owners profit through our \$2500 offer to chauffeurs. Ask us about it.

THE WINTON MOTOR CARRIAGE CO.

Member A. L. A. M.

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New York	Chicago	Philadelphia	Boston
San Francisco	Pittsburg	Seattle	Detroit
	Baltimore		